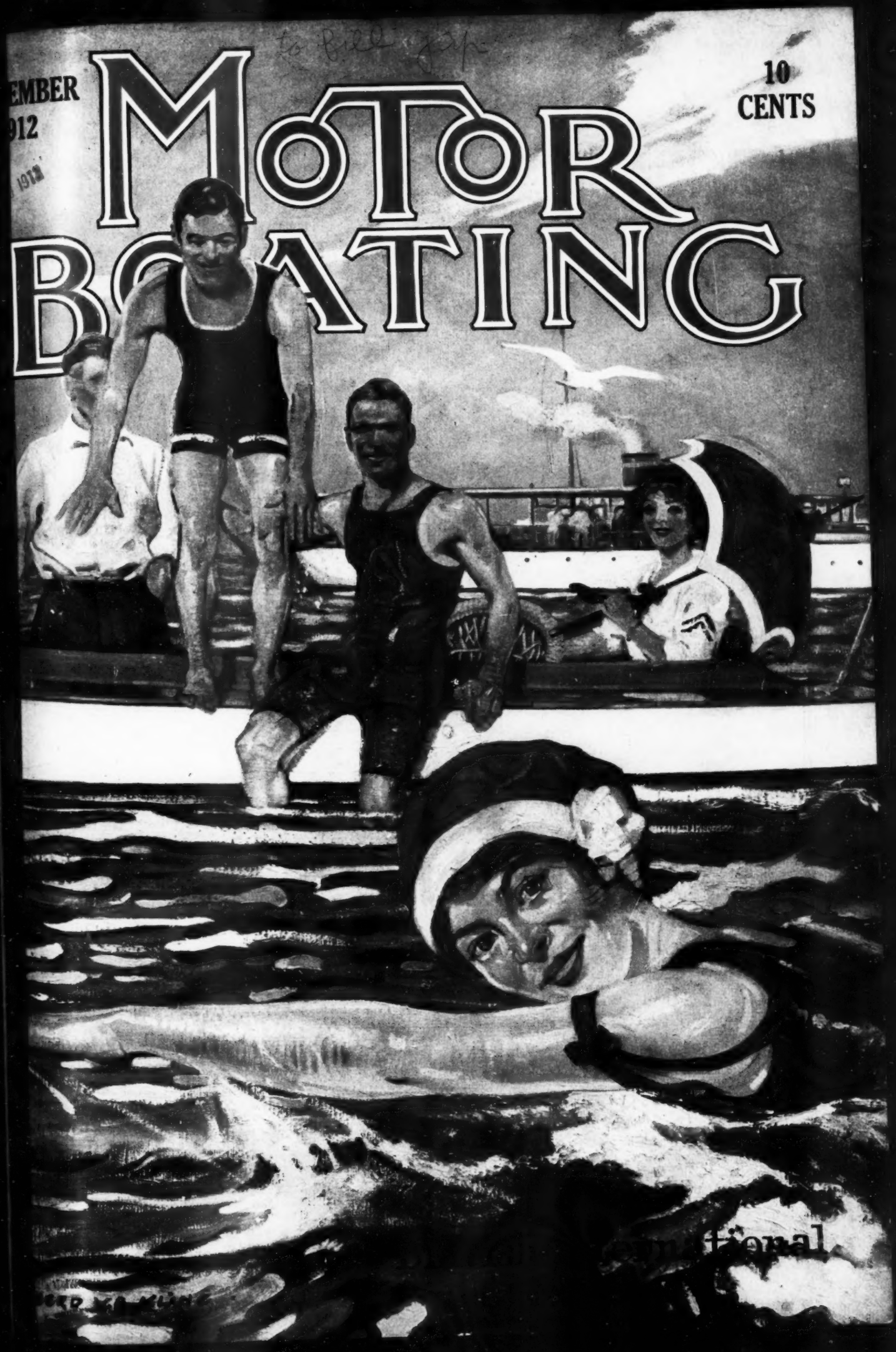
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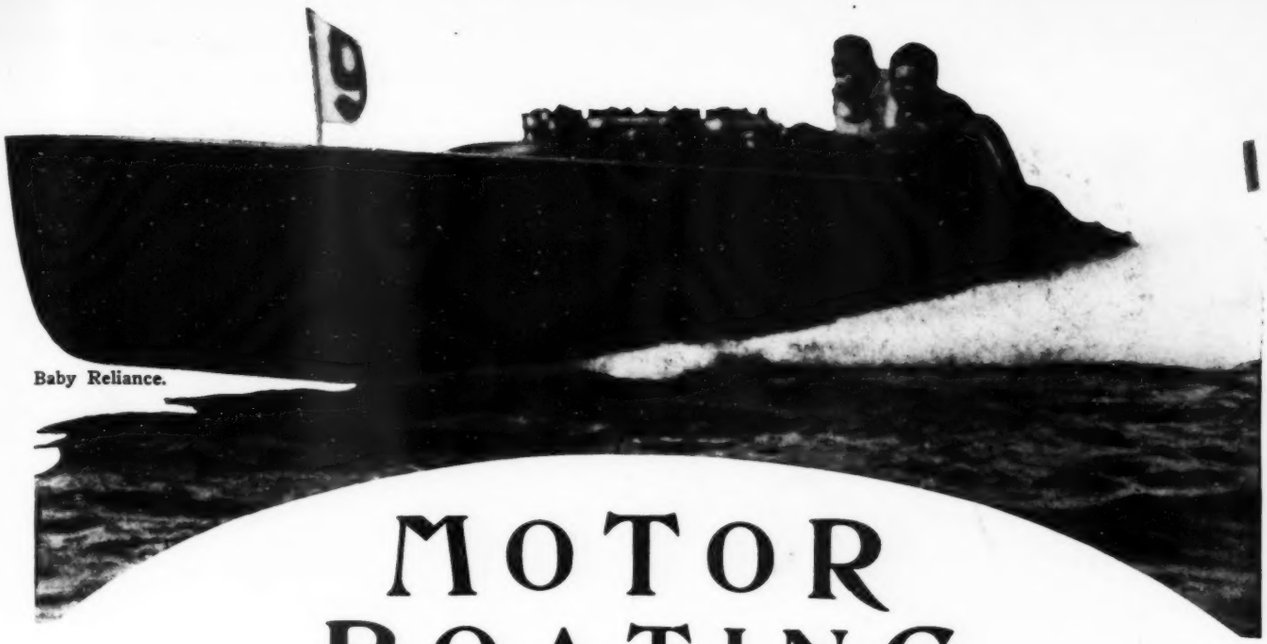

Baby Reliance.

MOTOR BOATING

September 1912

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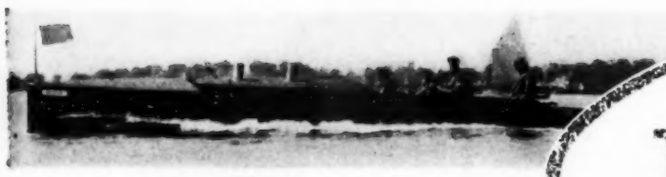


Dixie I.

The INTERNA

Dixie III.

Descriptions of the Three British Challengers and the American Boats That Tried for a Place on the Team of Defenders. Something About the History of the British International and a Brief Account of How Dixie I Brought the

THIS, the eighth competition, and the fourth in this country for the British International Trophy donated by Alfred Harmsworth, Lord Northcliff, marks another epoch in the march forward of the speed of high powered motor boats and the development of the hydroplane which at the date of the first few contests was still undiscovered. It is also the first year since this country entered its initial challenger that one of the famous family of 40-ft. Dixies has not been on hand as a defender.

The competition for this trophy is open to motor boats of all nations yet it has been won every time by either English or American craft although a French boat won on a technicality the second time it was raced for.

The trophy was first brought to this country by the victory of Commodore Schroeder's Dixie I at Southampton, England, August 2, 1908. Dixie racing against the English boats Daimler I and Daimler II made the course of 35 miles in 1 hour, 15 minutes and 46 seconds, which is at an average of 24.9 knots. The American boat won by nearly two minutes over the faster of the foreign boats. Dixie was a 40-footer powered with one 130 H. P. four cycle engine.

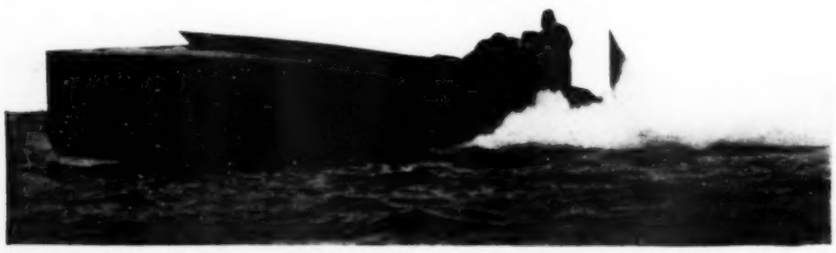
Commodore Blackton will drive his new 26-foot Baby Reliance IV and "Wally" Van Nostrand will encourage the engines.

On August 3rd, 1908, Dixie II, also owned by Commodore Schroeder, successfully defended the Trophy at Huntington Bay, Long Island Sound, against the English boats Wolseley-Siddely and Daimler II. The younger Dixie this time had one 200 H. P. four cycle engine and covered the 30 mile course in 1 hour, 4 minutes and 57 seconds, 49 seconds ahead of her nearest rival, the Wolseley-Siddely and at an average speed of 27.75 knots.

On August 20th, 1910, Dixie III with the same engine that drove Dixie II to victory, again successfully defended the Trophy. The winner this year was owned by Frederick K. Burnham and she defeated the English boats Pioneer, owned by the Duke of Westminster, and Zigorella, owned by Daniel Hanbury. Her time for the 30 nautical mile course was 59 minutes and 16 seconds which is equivalent to 30.13 nautical miles per hour. The victory was not altogether a conclusive one for Pioneer, really the first hydroplane invader, was by far the faster boat but experienced trouble during the first lap, allowing the slower but more reliable displacement boat Dixie III, to win.

Last year's races are well remembered. The conditions had been revised, necessitating the winning of two races instead of one and so Dixie IV lived up to the reputations of her forbears and went the 30 mile course the first day in 51 minutes, 15 seconds, and the second in 52 minutes, 47 seconds, the former being at the rate of 35.12 nautical miles an hour, considerable of an advance over the year before. The American boat's team mates were the Disturber II (now named Chicago), and Viva and the British team was made up of Pioneer, Maple Leaf III and Tyreless.

Less publicity has been given to this year's boats, both challengers and defenders, than ever before, much in contrast to last year's much heralded 50 milers, on both sides of the great pond, which did not materialize. The British



Maple Leaf IV, W. Mackay Edgar's challenger, is a Saunders-Fauber 40-footer driven by a pair of Austin engines aggregating 760 horsepower.

F. W. Wort's Crusader III was designed and built by Apel of Sand Burr fame. She is powered with a 275-horse, 12-cylinder Van Blerck.

TIONAL Racers

Dixie II.

Dixie IV.

Harmsworth Trophy to America and Dixie II, Dixie III and Dixie IV Were Successful in Keeping it Here. A Chart of the Course of the Elimination Trials and the International Races Held in Huntington Bay, Long Island.

team selected, seems well balanced, one very speedy craft and two reliable teammates, somewhat slower yet consistent performers in all kinds of weather. England is not coming this year, however, without her share of hard luck again, for two of her fast boats, Silver Heels and Defender III, have been left behind, the former not being ready and the latter due to a broken crankshaft. Maple Leap IV has averaged better than 40 knots over a 30 mile course and if that is the case and she can repeat the performance on Huntington Bay, the Yankees will have to use all of their reserve power to keep the Trophy on this side.

Maple Leaf IV is a new boat with better engines than ever the third of her name could boast. Her dauntless owner, W. Mackay Edgar, a Canadian born, has sought fresh aid this year. The old engines he despatched to a firm of fine repute, the Austin Motor Co., near Birmingham, who completely rebuilt them. For the hull he went to Saunders, the wizard of Cowes, the man who builds boats with the master skill of old cabinet makers. Thus we find Maple Leaf IV a Fauber hydroplane, up to the 40 foot limit, with three-ply copper-sewn planking as is the Saunders style. She is a pretty boat at speed, lifting with little change of trim, and skimming with an easy grace that no little sea can spoil. The wake is small and the fine spray off her quarters rises little.

The engines have a certain relationship with those of last year's Maple Leaf III, for they have the same crankcase and crankshaft. Otherwise all is changed. Mr. Austin designed something new on the old lines, twelve cylinders, inclined six aside of the vertical, developing about 380 H. P., bore and stroke, as before, 7½ in. by 7 in. A brace of these drive the boat. Both stood well up to their prolonged shop-tests, giving 380 H. P. for protracted periods and showing 400 H. P. on short runs. The power in the boat may thus be regarded as 760 H. P.

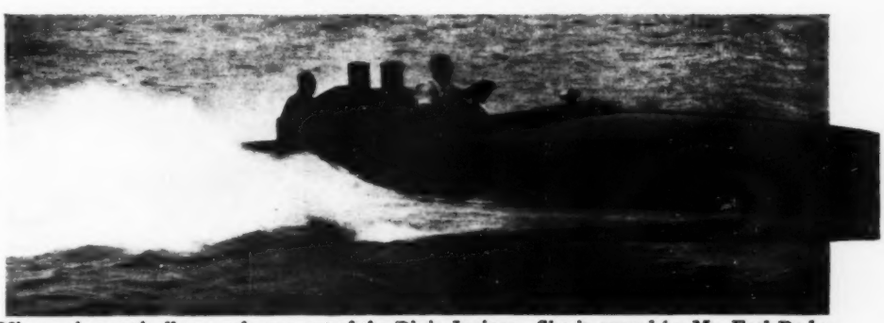
Milmar and Mona suffer by keeping such good company. They are clever little craft, which at any other time would have been hailed with great joy. Mona is the Marquis of Anglesey's 26-footer, a Thornycroft modeled hydroplane, with an eight cylinder motor of 120 H. P. which perhaps can be pushed to give 150 H. P. Apparently she can keep up to 32 knots on a triangular course.

Milmar is one foot longer than Mona, and belongs to as cheery and generous sportsman as ever sought a race. Mr. N. C. Neill promised to cross the Atlantic with Milmar as reserve, even if Silver Heels had been chosen in her place. Milmar is a hydroplane of the Thornycroft type, driven by a six-cylinder Napier engine of 180 H. P., which makes a combination good for something like 32 knots.

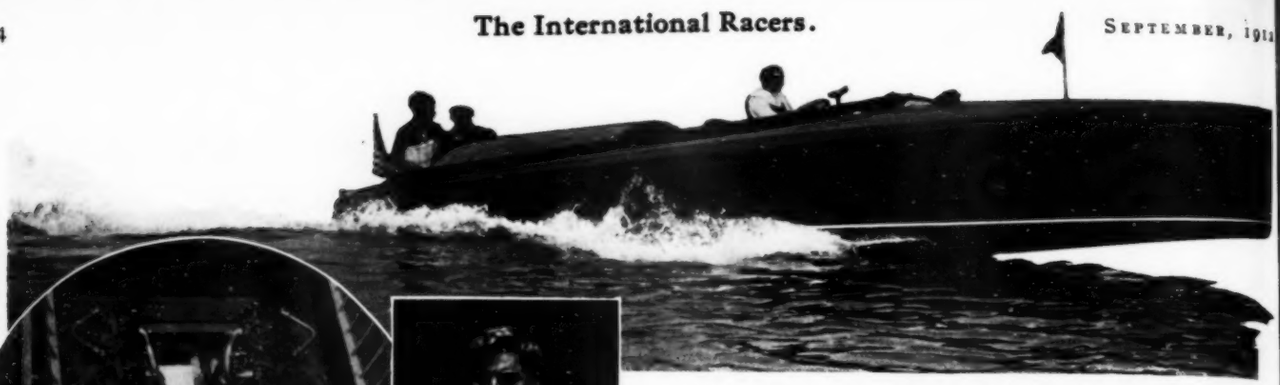
J. J. Ryan, the papa of all the Baby Reliances.

Of American boats, there were many possibilities when the season opened, less when the half way mark was reached and an astonishingly scarcity of those capable of the necessary speed when the eliminations were called. Yet even then the number was much larger than in any other year past and some new corners that had not been heard from in the great Regattas of the year, at Davenport, the Thousand Islands, and at Chicago, sprang surprises. The uncertain possi-

Mr. T. Sopwith, the amateur aviator, motorist and hydroplanist, at the wheel of Maple Leaf IV, showing the 12-cylinder V-type engines.



Minnow is practically an enlargement of the Dixie Juniors. She is owned by Mr. Earl Dodge and is driven by two 90-horse Sterlings.



Ankle Deep, a Crane 32-Footer of the Dixie, Jr., type.

The two 8-cylinder racing Sterlings deliver 300 horsepower.

Count Casimir Mankowski, the owner of Ankle Deep.

bilities of the hydroplane tempted many designers and builders to experiment with 32, 26 and even 20 footers and the results were remarkable. The world record, in fact, must be credited to one of these little 20 footers that went a mile in one minute and 8 seconds at Davenport on July 5th.

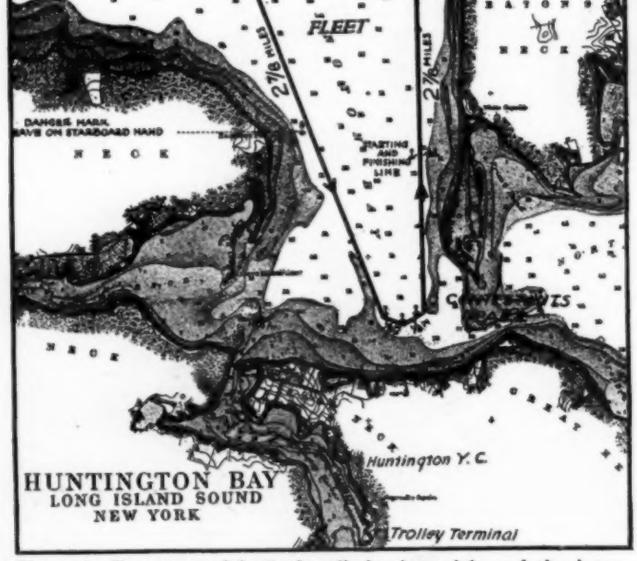
The fortunate one was Baby Reliance III, owned by Commodore J. S. Blackton of Brooklyn, N. Y., and built by the Smith-Ryan Boat Co., with a 12 cylinder Van Blerck engine. The same owner has a 26 footer of the same make with two 8-cylinder Sterlings. Baby Reliance IV, entered for the Internationals and his wife has entered Baby Reliance III, another new 26 footer. Contrary to the usual custom this boat has only one propeller, both engines being geared to the same propeller shaft.

Baby Reliance III has the same engine that was in the hull of the same name when she raced at Davenport, but her 20 foot hull has been replaced by one of 26 feet in length as the waters of Huntington Bay are likely to prove more treacherous than those of the Mississippi River.

Mr. Fauber and Commodore Pugh on board Disturber III.

The Dixie, Jrs., designed by Tams, Lemoine & Crane of New York City should show up well. Their reputation in the past races this season has been only the best and at the Gold Cup races early last month they were at the head of the list. There are three Dixie Juniors that appear as worthy contenders for a place on the team, Ankle Deep, a 32 footer, owned by Count Casimir S. Mankowski; Minnow, a 26 footer, owned by W. E. Dodge, New York City and another boat of the same length owned by P. K. G. Billings of New York.

Of the 20 footers of this family P. D. Q. II, owned by A. G. Miles, already has a record of 36 miles an hour as an average for a 32-mile race at the Thousand Islands but it hardly seems probable that



The 7½-mile course of both the elimination trials and the international races in Huntington Bay.

Mr. N. C. Neill at the wheel of his 27-foot challenger, Milmar. The boat is a Thornycroft hydroplane powered with a 6-cylinder, 180-horse Napier engine.

Mona, the Marquis of Anglesey's 26-foot Thornycroft hydroplane, an extremely light boat powered with an 8-cylinder, 120-horse Wolseley engine.

The British Challengers.

Boat.	Length.	Owner.	Designer.	Builder.	Engines.	Total Horsepower.
Maple Leaf IV.	40 ft.	W. Mackay Edgar	Fauber	Saunders	2 12-cyl. Austin	760
Mona	26 ft.	Marquis of Anglesey	Thornycroft	Thornycroft	1 8-cyl. Wolseley	120
Milmar	27 ft.	N. C. Neill	Thornycroft	Thornycroft	1 6-cyl. Napier	180

The American Possibilities.

Boat.	Length.	Owner.	Designer.	Builder.	Engines.	Total Horsepower.
Ace III	26 ft.	W. W. Trimpi, Newark, N. J.	Joe Leyer	Joe Leyer	1 8-cyl. Sterling	150
Ankle Deep	32 ft.	Count Casimir S. Mankowski, Lake George, N. Y.	Tams, Lemoine & Crane	Staten Island Shipbuilding Co.	2 8-cyl. Sterlings	300
Baby Reliance III	26 ft.	Mrs. J. S. Blackton, N. Y. City	Smith-Ryan Boat Co.	Smith-Ryan Boat Co.	1 8-cyl. Sterling	150
Baby Reliance IV	26 ft.	Com. J. Stuart Blackton, New York City	Smith-Ryan Boat Co.	Smith-Ryan Boat Co.	2 8-cyl. Sterlings	300
Crusader III	26 ft.	F. W. Wort, Akron, Ohio	Adolph Apel	Adolph Apel	1 12-cyl. Van Blerck	275
Disturber III	40 ft.	Com. James A. Pugh, Chicago, Ill.	Fauber	Weckler Boat Co.	2 12-cyl. Van Blerck	550
Kitty Hawk II	26 ft.	H. H. Timken, Canton, Ohio	J. L. Hacker	Mayer	1 6-cyl. Van Blerck	135
Minnow	26 ft.	W. E. Dodge, N. Y. City	Tams, Lemoine & Crane	Lawley	2 6-cyl. Simplex	180
Peter Pan V	20 ft.	James Simpson, N. Y. City	George F. Crouch	Reliance Motor Boat Co.	1 6-cyl. Van Blerck	135
Sarecen	20 ft.	Henry Hess, Philadelphia, Pa.	Adolph Apel	Adolph Apel	2 8-cyl. Parken	120
———	40 ft.	L. V. Harkness, N. Y. City	Lawley	Swasey, Raymond & Page	3 V-type Christie	500
———	26 ft.	P. K. G. Billings, N. Y. City	Tams, Lemoine & Crane	Lawley	2 6-cyl. Sterlings	180

this will be quite enough to allow her a chance at Huntington with a boat like Maple Leaf IV on the opposing team. Ankle Deep and Mr. Billings' boat each have two Sterling engines, the former having 300 H. P. with eight cylinders, and the latter having 180 H. P. with six cylinders per engine. Minnow has two six cylinder Simplex engines developing a total of 180 horsepower. All of these boats were built with the same care characteristic in the construction of Dixies I, II, III, IV. All have one step in the under body. The hulls were built by Lawley of Boston, and the Staten Island Shipbuilding Co.

Crusader III of Apel design and build is one of the few monoplanes to accomplish great things this year but a series of misfortunes has pursued this boat since it was made ready early in the season. Crusader III was the first boat to make an official performance this year and it is reported that she established a record of over 50 miles per hour. The little chance at the Chicago races that she had to publicly demonstrate her speed qualities seemed to prove that she was very fast but two collisions with logs during the week wrecked her chances for the prize. In appearance Crusader III is not unlike last year's Sand Burr. She is 26 ft x 8 ft. 2 in. wide and low. When underway her bow rises considerably and she skims along apparently on the top of the water. A forward rudder is her only means of steering.

Peter Pan V, the new 20-footer of the Reliance Motor Boat Company, powered with a six-cylinder Van Blerck.

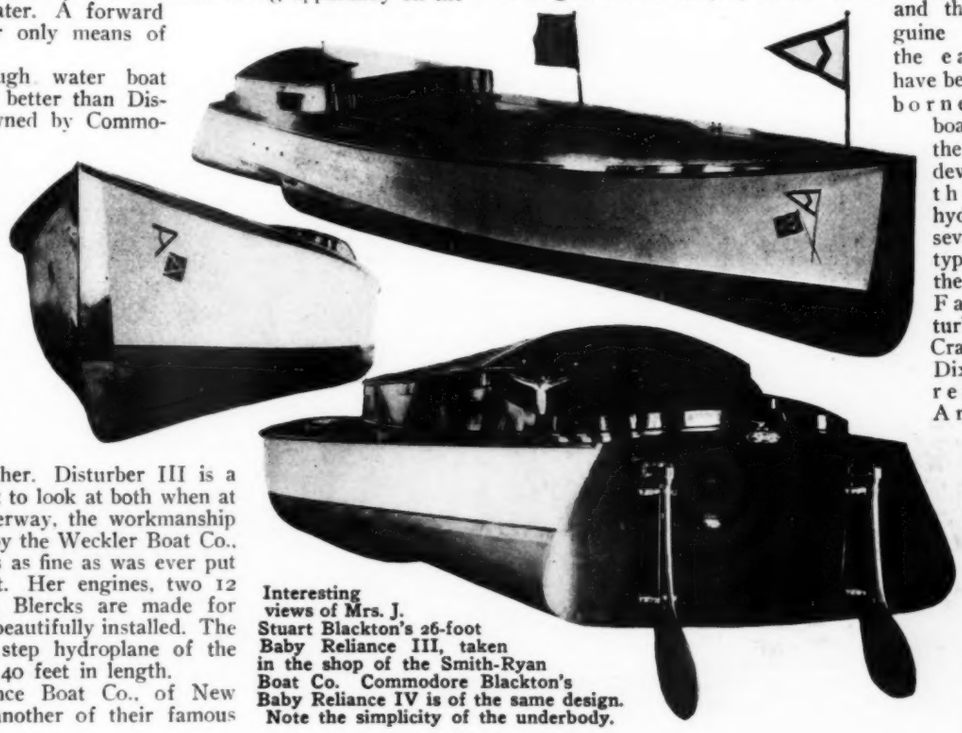
For a rough water boat there is none better than Disturber III owned by Commodore J. A. Pugh, as was demonstrated at Chicago when on several occasions she was the only boat that would brave the seas and be ready to start in any kind of weather. Disturber III is a beautiful boat to look at both when at rest and underway, the workmanship on her done by the Weckler Boat Co., of Chicago, is as fine as was ever put into any boat. Her engines, two 12 cylinder Van Blercks are made for business and beautifully installed. The boat is a 5 step hydroplane of the Fauber type, 40 feet in length.

The Reliance Boat Co., of New York, have another of their famous Peter Pans ready. It is known as Peter Pan V and is 20 feet in length with one 6-cylinder 135 H. P. Van Blerck engine.

Other possibilities that might be mentioned are a 40 footer being built by Lawley for L. V. Harkness, of New York, with three V-type Christie motors from designs by Swasey, Raymond & Page of Boston; Restless II, designed by Crane and owned by F. F. Chesebrough is a last year boat, rebuilt, and earlier in the season reports seemed to indicate that she was one of the most likely of the defenders. She has two 16 cylinder Herreshoff motors and the hull was built by Wood & McClure.

Sarecen is a 20-footer designed and built by Adolph Apel of Atlantic City, N. J., and a speed of 43 miles an hour has been claimed for her. She is equiped with two 8-cylinder Parken motors of 60 h.p. each, and is owned by Henry Hess of Philadelphia.

Another Apel boat owned by Coleman Du Pont of Wilmington, Del., is Tech, Jr., a 20-footer with a 6 cylinder 125 h.p. Van Blerck engine, and she is credited with having obtained practically the same speed as Sarecen. As we go to press, nine boats are already gathered in Huntington Bay awaiting the first of the trials and more are to come. It is by far the best showing ever made in preparation for the International Races and the most sanguine forecasts of the early season have been more than borne out. The boats represent the very highest development of the American hydroplane of several different types. There is the five step Fauber, Disturber III; the Crane single step Dixie Jrs., represented by Ankle Deep, Minnow, P.D.Q., and Avanti; the Baby Reliances of the Smith-Ryan type, and the descendants of Sand Burr, designed by Apel.



Interesting views of Mrs. J. Stuart Blackton's 26-foot Baby Reliance III, taken in the shop of the Smith-Ryan Boat Co. Commodore Blackton's Baby Reliance IV is of the same design. Note the simplicity of the underbody.

CHICAGO'S CARNIVAL

A Remarkably Well Planned Meet Done in Chicago's Big Way, That Had Every Indication of Being the Biggest Thing of the Kind Ever Attempted. A Great Gathering of Motor Boatmen and a Number of the Season's Most Promising Boats.

By. Chas. F. Chapman.

Photographs by R. H. Hall.

FOR months the entire motor boat world has been reading of the preparations going on at Chicago for the annual meet of the Western Power Boat Association, the association which in the past has done so much in bringing together the great number of speed craft and matching them, boat for boat, with only the over all length as a means of classifying them.

After the results at Peoria in 1910 and 1911 it was only natural for the world to look toward Chicago with great expectations. Plans from a small beginning, broadened with great rapidity into those for the greatest meet ever held in the country. Prizes valued up to a hundred thousand dollars flowed into the committees' hands and co-operation was offered from every branch of the sporting and commercial world.

Chicago is ideally located for a motor boat race meet as its harbor is practically free from any shipping whatsoever, and it was possible to lay out a course, close to the heart of the great city and within easy view of the great sky scrapers. The fine yacht clubs of Chicago are located almost alongside the great hotels and department stores and other sources of necessary supplies and the conveniences for caring for visiting yachtsmen are unsurpassed.

The water front is protected from the easterly storms of Lake Michigan by several tiers of breakwaters extending into the lake both to the north and south. The southerly breakwaters form a complete basin of about a mile in length and one-half mile broad in front of the clubs and it is within this basin that Chicago's yacht anchorage is located.

The race course was laid out just outside of this breakwater around the basin anchorage. On the breakwater, nearly a mile of grandstand was erected capable of holding 50,000 people, and an elaborate system of telephonic announcing megaphones was installed which kept the crowd posted at all times on matters that generally are known only to the committee and officials.

The judges' boat was anchored at the outer end of the starting line off the grandstand and was in communication with it by means of a telephone cable laid especially for the occasion. The course lay in a southeasterly direction from the starting line for a distance of about one and one-half miles, then north for two miles around the gas buoy off the entrance to the river and back to the starting line, its entire length being visible from the grandstand.

Commodore James A. Pugh was the man instrumental in bringing the meet to Chicago. Commodore Wm. Hale Thompson of the Chicago Yacht Club, Commodore T. J. Quail of the Columbia Yacht Club of Chicago, and Commodore Bayard Holmes, Jr., of the Jackson Park Yacht Club were chosen flag officers of the organization known as the Associated Yacht and Power Boat Club of America.

She's a motor boat, too, and she came clear from Burlington on the Mississippi with a load of "fans."

The events scheduled for the competition were most complete and attractive. For the 20, 26, 32 and 40 foot classes, overall length was the only restriction and the boats of a lower class were permitted to enter the higher classes if they so chose. There was no limit to the amount of power installed, type of boat, number in crew, etc., and boats raced boat for boat without time allowance or handicap. Three races were held in each of the classes and it was necessary to win a majority of the heats to capture first prize. The length of the course for the 20, 26 and 32 foot classes was about 15 statute miles and that for the 40-foot class, 20 miles.

The prize for the Championship of America Race was a perpetual trophy to be won each year by the club whose motor boat makes the best time in three out of five races in competition, open to the world. It is valued at $22,500 and is a modified reproduction of Winged Mercury presenting Neptune with a modern hydroplane. Mercury and the motor boat are in silver and Neptune, the dolphins and water surroundings are done in bronze. The trophy stands over five feet high and contains 1000 ounces of silver. In addition to this gift, Mr. William Wrigley, Jr., the donor, has given an endowment fund of $17,500 so that the winner of this trophy each year will receive a replica of the larger one. In addition to trophy, the crew of the boat winning the Championship of

Débutante, the 26-foot Thornycroft hydroplane brought from England for the meet won many second prizes and was the most consistent performer of all the participants.

Commodore Pugh's Disturber III is a magnificent hydroplane of the Fauber type, built by the Weckler Boat Company and driven by two twelve-cylinder Van Blerck engines.

America, receive $1,500 in cash.

The first prize in the 20-foot class was a beautiful silver shield on mahogany presented by William Randolph Hearst, of New York, and a cash prize of $500. The second prize of this class was a shield presented by the Hotel Sherman, of Chicago, and the $250 cash prize, with a $100 purse for the third boat. In the 26-foot class Henry B. Clarke gave a silver shield on mahogany background valued at $500 and a $500 purse. The new Southern Hotel gave a silver cup for the second prize, a cash prize of $500 for second, for third $250 were also offered in this class.

For the 32-footers there was a large bronze Chelsea clock mounted on a marble base, the clock supporting a silver hydroplane, given by William C. Thorne, valued at $500 and $1,000 purse. Second prize, a bronze Chelsea clock in the shape of a steering wheel mounted on bronze valued at $250 was given Irwin Brothers in addition to a $500 purse.

Adam Weckler, Jr., gave a magnificent trophy valued at $1,000 for the 40-foot class, representing a Fauber-Weckler hydroplane at the top of the globe, and H. H. Porter, Jr., the second prize a round bronze shield with a hydroplane at full speed flying the colors of the Chicago Yacht Club. In addition to the above prizes for this class, cash purses of $1,000 and $500 were offered for first and second, respectively.

For the first boat making 50-miles per hour or over during race week, Commodore William Hale Thompson offered a large bronze and silver shield mounted on oak valued at $500 and for the winner of the mile dash free for all, George B. Carpenter & Co. offered a silver cup valued at $250.

For the invitation and match races there were cups galore presented by Commodore W. R. Goodwin, the Perfecto Co., Roger Sullivan and others. In each of these races there were cash prizes also for the first and second boats.

After the great foresight displayed in planning this carnival, the thorough work of the committees and officials, the large amount of publicity given in advance and the almost unbelievable value of the trophies and cash prizes offered, all that was needed to make the affair the greatest success in history was the co-operation of motor boat owners.

To Commodore Pugh belongs much of the credit of promoting the meet and getting together the remarkable collection of trophies.

The entry list was an extraordinarily large one consisting of twenty-eight speed boats, the flower of the nation, but how different was the aspect when the regatta really began. Saturday, the 10th, the weather was bad, which gave a good excuse for putting everything over until Monday, when it was hoped that enough boats would put in an appearance to make good racing. All day Sunday was spent swelling the coffers of the Long Distance Telephone Companies in an attempt to locate some of the strayed ones.

Monday dawned fair but with some sea coming in from the lake and Baby Reliance I, the famous little 20-footer, with her 8-cylinder Sterling engine owned by Commodore J. S. Blackton, was the first of the smaller craft to be given a try-out. The eyes of the Chicagoans opened wide when Mr. J. J. Ryan, who was driving her, opened up his craft. She fairly flew over the water in front of the clubhouse. As he turned her nose toward the gap that led to the outer lake a big comber struck her, turning her over in a complete somersault and down she went in 20 feet of water. Mr. Ryan was severely injured in trying to work himself free as the hydroplane sank but gamely witnessed the races during the week on crutches. Commodore Blackton was keenly disappointed but wired immediately for his Baby No. 2 which arrived two days later in time to clean up everything in her class. All week long divers walked the bottom near the spot where the boat went down but were unable to locate her and one of the fastest boats entered was put out of the running.

Crusader III, owned by F. W. Wort, of Akron, Ohio, a monoplane, was the favorite in the 26-foot class, as reports had it early in the season that she had done better than 50 miles per hour. She has the 12 cylinder 275 h.p. Van Blerck engine in her that was on exhibition at the New York Show last winter and it is placed well aft in the large cockpit extending almost into the laps of the helmsman who sits practically on the after deck. The hull is 1½ inches less than 26 feet in length and 8′ 2″ wide. Its wide flat appearance resembles a flounder very much but her excessive beam allows considerable working space on each side of the engine which is not present in most boats. One 30-gallon gasoline tank is carried under each side deck and only two Rapball carbureters are used to feed the 12 cylinders. Two magnetos, one on each side of the engine forward, supply the juice for ignition and the circulating water is obtained by a rotary pump connected by a chain to the shaft. No fly wheel is required and the main shaft is geared to the propeller shaft at the forward end near the reverse clutch. The cranking to start the engine is done aft, by one of the engineers who sits alongside the helmsman while the second engineer is stationed forward of the engine. The steering wheel is located at the extreme stern on the starboard side and connected to the forward rudder by bronze cable, there being no aft rudder whatsoever. A 20″ x 32″ three-blade wheel is turned about 1800 r.p.m.

Kitty Hawk II, owned by H. M. Timken, of Canton, Ohio, the well-known winner of many races both last year and this, was ready for the start of the 26-foot class also. She has a 6-cylinder 5½″ x 6″ Van Blerck engine of 140 h.p. Her hull is 26 feet long and very low with six stacks extending out of her metal deck near the gunwale. A metallic sliding hatch over the engine is a very neat and serviceable arrangement. Two outboard rudders are used and a crew of two men are carried who both sit aft. There is one deep step in the underbody a little aft of amidships. The engine which has a bronze fly wheel, turns the three-bladed 20 in. x 22 in. wheel over about 1200 r.p.m.

Debutante, owned by Noel Sampson, of London, England, the other starter in this class, is about the happiest combination of speed boat and runabout possible. She was brought over from London by her owner especially for the races. He was playing for second money and was there at the finish of every heat. Although slower by miles an hour than the others, he started in every race during the week and was at the finish also, second in many instances after the other had given up. He was never in trouble, reeled off lap after lap with little variation in time and always had a glad word for everyone.

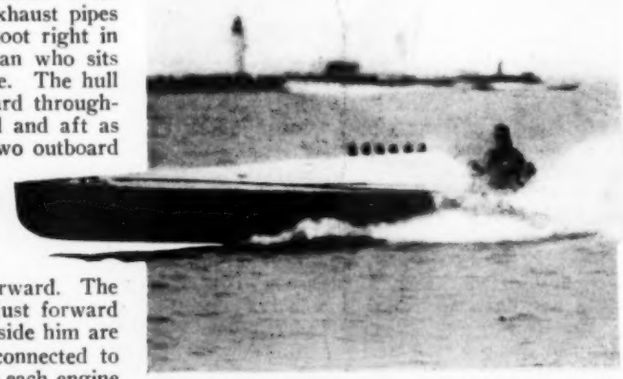
His boat is a 26-footer designed by Thornycroft, of England, and equipped with a 40 h.p. engine of the same make with four 5"x7" cylinders turning a 3-blade 16" x 21" wheel about 1200 r.p.m. The hull is very full forward and tapers off fine aft, being low at the bow and stern and very high amidships. There are two oval cockpits with the engine under the deck between them. The forward cockpit was covered over with canvas and the crew of two sat in the after one. So well did the engine behave that it was possible to allow it to run idle for hours at a time without attention while the crew were abroad the committee boat. This little craft was capable of 25 miles an hour and was beating 35-milers day after day.

Chicago, ex Disturber II, won the 32-foot class, but in actual speed was far behind this season's boats.

The first round (7½ miles) of the 26-foot class was a fine exhibition and our hopes rose. Kitty Hawk rounded one second ahead of Crusader III but slightly after rounding the next buoy the latter stopped entirely and began to settle by the stern so we knew she was in trouble. A revenue cutter reached her just in time, passed two slings under her, hoisted her out of the water and saved her from sinking. She had pounded badly and broken in a couple of planks. This was repaired in time for the next day's racing but her engine received such a wetting that it could not be started for Tuesday's events.

With Crusader out of the races, Kitty Hawk had everything her own way covering the 15 miles in 26-43 which is at the rate of 33.7 miles per hour. Debutante took second in 41-17. Kitty Hawk just finished in time, for she also had knocked a hole in a plank and reached her boathouse half full of water. With two of the fastest boats having holes in their bottoms and one at the bottom of the lake, things looked rather blue for the rest of the week but their owners rose to the occasion and had a gang of men at work all night on their craft making the necessary repairs. A new plank was put in Crusader III, while Kitty Hawk's bottom was so far gone and so weak that it was considered best to cover the bottom in the vicinity of the break with sheet steel.

When the 32-foot class was called the only smaller boat that had been able to stand the grind of the 26-foot race was the little Debutante and she was there at the starting line together with two 32-footers, Chicago and Beat It. Chicago is the old Disturber II, renamed. She has two 8-cylinder Sterling engines placed a little aft of amidships in the center of a large open cockpit with no kind of protection against waves and spray. The engines turn opposite directions, outboard. The fuel is carried in two cylindrical copper tanks aft of the engine, raised well up above the coaming and top of the engines and supported by a pipe frame work. Each engine has four exhaust pipes pointing upward that shoot right in the face of the helmsman who sits aft on the starboard side. The hull has considerable freeboard throughout, being high forward and aft as well as amidships and two outboard rudders are used which are connected together under water. In all of the races Chicago carried a crew of three men, two aft and one forward. The two clutch handles are just forward of the helmsman and beside him are two speedometers one connected to each. Cranking to start each engine is done at the flywheels forward.



Kitty Hawk II showed remarkable speed in the trials, but her hull couldn't stand the pounding of the rough water.

For the 40-foot class on Monday, Disturber III was the only boat that appeared which necessitated postponing the event. For the amusement of the spectators Commodore Pugh drove his big 40-footer up and down in front of the grandstand several times and then he went over the mile straight away course against time, which he covered in each direction in 1:34, equivalent to 38.2 miles per hour. The boat travels along in beautiful shape and makes very little disturbance considering her size and power. She is a fine example of the best workmanship, having been built by the Weckler Boat Company, of Chicago, from designs by Fauber. She has two 12-cylinder 5" x 6" Van Blerck engines with a total of 550 h.p. The hull is mahogany and has five steps in her under body. Two outboard rudders, extending very deep into the water, fastened together both on deck and under water are used and a heavy system of tillers and quadrants on deck connect with the vertical shaft of the steering wheel on the starboard side of the after deck. The helmsman sits in a chair raised between two and three feet above deck which gives him a clear view ahead and on all sides. The four levers to the spark and throttle of the two engines are brought out just beneath the horizontal steering wheel within easy reach of the helmsman's fingers. Two speedometers are fixed just below these and on deck are straps for the helmsman's feet.

The two exhaust pipes are carried through the transom aft, thus keeping all smoke and smell astern. Four men make up the crew, one being stationed forward of the engines, one just aft of the power plant and two on the after deck. Bosch ignition is used on both engines. Two cylindrical gasoline tanks are carried below the after deck having a capacity of 120 gallons and being filled through deck taps. Her engines are connected direct to the propeller shafts.

The water was like glass on Tuesday but no boats appeared for the 20-foot class, so this race was again postponed. The men grappling for Baby Reliance thought they had located her but when the diver went down he found the hooks made fast to a rock instead. For the 26-foot class there were no boats either, as Kitty Hawk and Crusader III had not fully recovered from their experiences of the day before.

When the 32-foot class was called, Kitty Hawk was ready and there was a long delay waiting for Crusader III, but finally the news came that her crew could not get the engine started so she was counted out, leaving Kitty Hawk, Chicago, Deputante and Beat It to fight it out. Kitty Hawk was decidedly the fastest and not much interest was aroused but on the first time around when Chicago was only four seconds behind the faster boat, we became excited. Debutante and Beat It came along at their usual speed and hardly had they passed for the first time when Kitty Hawk and Chicago came into view nose and nose. The latter finally passed the Kitty Hawk and finished the 2d round ten seconds ahead of her. Not over 500 yards from the committee boat Kitty Hawk stopped and in an instant her stern was out of sight, her nose high in the air and her crew swimming. The hull remained in this position for three or four minutes, several revenue cutters rushed to her assistance and reached her just in time to

(*Continued on page 66*)

The RACE to BERMUDA

The 719 Mile Ocean Contest between Dream and Kathemma and Their Thrilling Experiences with the Squalls of the Gulf Stream.

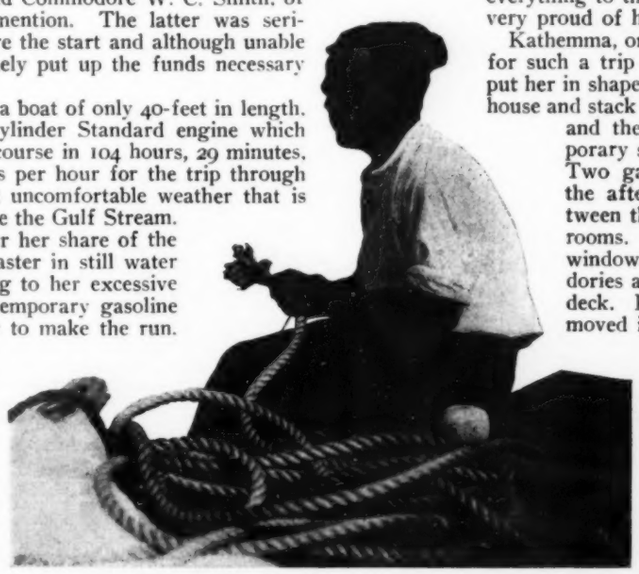
THE start of the Bermuda Race this year was shifted from New York, where it has been made since the first race in 1907, to Philadelphia, where the Yachtsman's Club, which made such a name for itself in running the Havana Race, took charge of the event. Earlier in the season reports reached us of eight or ten entries for this great ocean race but as the date of the start drew nigh they gradually dropped out for one reason or another and when the actual fitting out was at hand, only two boats could be found which were willing to attempt the grill that they knew was before them.

Two better equipped boats or more ably manned could hardly be found the world over and the spirit of the owners, Capt. C. L. Lagen, of the Dream, and Commodore W. C. Smith, of Kathemma, deserves special mention. The latter was seriously injured a few days before the start and although unable to make the trip himself, gamely put up the funds necessary to assure his boat's entry.

Great credit goes to Dream, a boat of only 40-feet in length, powered with a 12 h.p. two-cylinder Standard engine which covered the 719 nautical mile course in 104 hours, 29 minutes, an average of 7.9 statute miles per hour for the trip through some of the nastiest and most uncomfortable weather that is possible on a body of water like the Gulf Stream.

Kathemma is in line also for her share of the credit, for although slightly faster in still water than her competitor, yet owing to her excessive power had to install several temporary gasoline tanks of considerable capacity to make the run. These proved her undoing as the connections gave way under the continued strain of the heavy seas, compelling her to lie to for many hours for repairs.

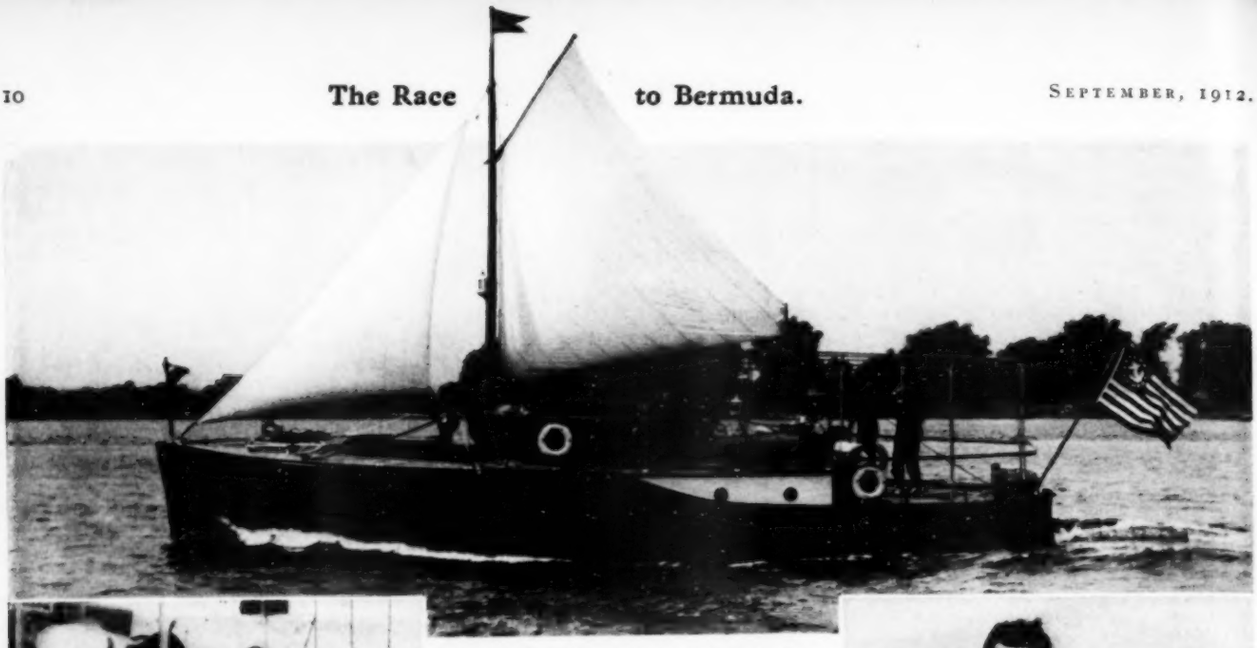
Complete plans of the two boats are shown on pages 44 and 45 of this issue of MoToR BoatinG and a complete list of the specifications of each is given herewith. Dream was built this year with the Bermuda Race as an object and was complete in every detail. Her designers, Bowes & Mower, of Philadelphia, showed excellent judgment in their planning and her builders, the South Jersey Yacht Building Company, did an excellent job. To inspect her a few minutes before the start one would hardly imagine she was to start on such a journey and aside from her sails, sea anchor and two dinghies on deck nothing unusual was visible. She has sleeping accommodation for her entire crew of six and the bunks were all made up shipshape. Her stores were in their places below decks, only a regular amount of fuel and fresh water was carried and her hatches were made fast in their usual way but so neat and complete was everything to the last detail that everyone felt very proud of her.

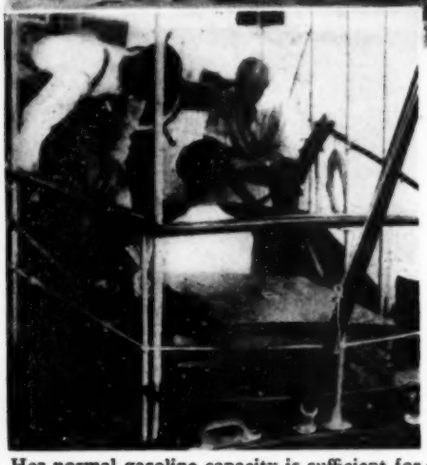


"Charlie" Mower preparing a sea anchor for Dream. He is a member of the firm of Bowes & Mower, designers of both racers.

Kathemma, on the other hand, was not built for such a trip and needed many changes to put her in shape. Normally she carries a pilot house and stack but these were removed bodily and the space decked over. A temporary steering wheel was rigged aft. Two gasoline tanks were placed on the after flush deck and two in between the berths in the owner's staterooms. All of the skylights and side windows were boarded over and two dories and a life boat were carried on deck. Kathemma's ballast was all removed in the fitting out and her bath tub was converted into an auxiliary ice chest. In addition several hundred weight of ice was carried on board. Seven men made up Kathemma's crew, all of them experienced in the racing game, although it was the first experience of some of them in ocean racing.

The official times of crossing the starting line were: Dream, 12:11:10 P. M., July





Her normal gasoline capacity is sufficient for the run.

Dream, the winner, had a strip tacked to her stem to bring her up to the 40-foot mark. See design on page 44.

C. L. Lagen, owner of the Dream.

27; Kathemma, 12:11:41 p.m., July 27.

Dream's elapsed time for the 719 nautical miles from Philadelphia to St. David's Head, Bermuda, was 104 hours, 29 minutes and 5 seconds. Kathemma's elapsed time was 126 hours, 8 minutes and 56 seconds, but as she had to allow Dream 14 hours, 14 minutes and 21 seconds, the latter boat won by the unusually large margin of 36 hours, 20 minutes and 22 seconds.

Dr. Eugene Swayne, of the Yachtsman's Club of Philadelphia, was a member of Kathemma's crew, and in the following log he tells of her encounter with the squalls of the Gulf Stream and of the accidents that caused her delay and lost her the race.

The Log of Kathemma.

Crossed starting line Race Street Wharf, Philadelphia, 12:10 p.m., amid cheers and salutes from many craft, Dream to our port. Escorted down channel as far as Reedy Island by revenue cutters, Mohawk and Wissahickon and Commodore Cartledger's Margaret II.

Crew—Dr. C. S. Street, master; R. L. Young, navigator; W. Roland, mate; Dr. Eugene Swayne, surgeon; Harold Renner, quartermaster; J. Schmidt, chief engineer; C. Tromley, assistant engineer; Cye Kullen, steward. Three others were to ship as crew, but at last minute backed out, so, instead of a crew of eleven, we sailed with eight.

From the start we hoisted sail and our boat seemed to leave the Dream astern inch by inch. We watched her closely going down the Delaware and by the channel buoys we saw that we were gaining, averaging about a mile gain per hour. The Dream's low rating compelled us to gain on her, because on the 719-mile run we were to allow her 14 hours, 14 minutes and 24 seconds.

After getting well under way and the excitement of the start was over, Doc Street assigned the watches and we settled down to sea work. Those not on duty were ordered below to stow away suit-cases and straighten up the ship. Schmidt, Roland and Renner were relieved until 6 p.m. I was at the wheel and my "watchmate," Dick Young, was lookout. After leaving Deep Water Point, opposite Wilmington, Del., we did not keep to the ship channel but chose our own way and shaved off corners wherever possible.

Saturday night was clear and the sea smooth; everybody was happy. At dusk a liner pased us close aboard and saluted.

We took our land fall from Cape May at 10:35 p.m.; the lighthouse bore N. E. ½ E. and ship headed S. S. E. at 10:35 p.m., and at 12:55 a.m. Four Fathom Bank Lightship bore N. E. (correct mag.) 5 miles departure. Latitude 48° 43′, longitude 74° 38′ West, variation 7° West. Wind S. W., weather clear, steering S. E. ⅛ E.

Sunday all hands yelling for breakfast before "Cy" could get even a fork out, and we began to enjoy our trip. We entered the Gulf Stream at 10 a.m. and noticed the difference in the color of the water. The deep blue was very noticeable. Fortunately, Dr. Street, that veteran pirate, had provided well for the trip, even to having cooked food, roast beef, boiled ham, roast chickens, boiled and baked potatoes. This was a great saving on our steward, and incidentally good for the crew, for all one had to do was steal into the galley and grab a piece of cold chicken when hungry.

We all remarked that the Gulf Stream was not what we expected to see; it was too smooth and quiet and the day was ideal. Young remarked that even speed boats could make the trip in a sea like that, but the captain said, "Hold on, boys! We are not there yet."

I was called at midnight for my trick at the wheel and when I came on deck I noticed it was clouding up and blowing fairly stiff from the southwest. Roland turned over the wheel and gave me his course S. E. ¾ S.

Monday at daybreak it was squally and cloudy with long swells and white-caps everywhere. All day it kept getting worse and we realized that we were in for some real rough weather. The sun disappeared behind the clouds Monday about 8:30 a.m. and it was the last we saw of it until 5 p.m. Wednesday, and then only for a few minutes.

Monday morning at eleven rain began falling and we ran into a heavy squall. This was our first real test of sea work on the Kathemma. We hurriedly took in sail but kept on driving her and the sea kept getting higher, but she never quivered. She proved her worth right there and our Buffalo engine kept right

The Boats.

	DREAM	KATHEMMA
Owner	C. L. Lagen....	Wm. C. Smith
Club	Yachtsmans	Ocean Gate
Designer	Bowes & Mower	Bowes & Mower
Builder	So. Jersey Y. B. Co.	Bird, of Camden
Year built	1912	1911
Length overall	40′-0⅜″	51.2′
Load water line length	39′-1″	40.24
Beam, overall	9′-6¾″	11.2′
Beam, water line	8′-7⅞″	9.95′
Draft at section	0-18¾″	20⅜″
Area M.S. section	18.53	16.91
Freeboard, bow.	.60″	65″
Freeboard, stern	.40″	30″
Make of Engine	4 cycle Standard	4 cycle Buffalo
No. of Cylinders	2	4
Bore and Stroke	6″ x 8″	6″ x 7½″
Horse Power	18.85	37.7
Propeller	28″ x 32″	32″ x 36″
Position of Engine	Amidship	Forward
Log	Hand	Hand
Lubricating Oil.	20 Gal. Zurnoil.	60 Gal. Zurnoil
Life boats	1 Round & 1 Flat Bottom..	2 Dories & 1 Round Bottom
Gasoline Tanks.	3 Copper, Built in	3 Copper, 4 Galv.
Position of Tanks	1 Forward & 2 Aft, Under Deck	2 on Aft Deck, 3 below Aft Deck, 2 in Stateroom
Capacity of Tanks	330	750
Lighting	Electric	Electric
Ignition	M. & B.	Jump Spark
Fresh Water Capacity	150	200
Ballast	1000 lbs.	0
Running Lights	Electric	Kerosene
Life Preservers	7 Jackets, 4 Ring Buoys..	15 Jackets, 3 Ring Buoys
Bunks	6	5
Steering Cables.	Steel on Deck	Steel below deck
Toilets	2 Goblet-Dolan..	1 Sands
Switchboard	Leonard	Apple
Batteries	Edison Storage 6½ volt	Alvern 6 V. 140 A. H.
Dynamo	Rossmassler Bonne 20 Amp.	Apleo 8 Amp.
Magneto		Bosch
Fire Extinguishers	1 Pyrene	2 Pyrene
Outboard	Rudder	Inboard

on regardless of the way those heavy seas pounded us.

The seas kept the wheel man busy and instead of doing a two-hour trick at the wheel it was about all anyone wanted to do an hour. We figured that we should sight the island sometime about 3 or 4 a.m. Wednesday, if all went well. Rain and squalls were getting to be very common before Tuesday morning and we were more or less used to them.

It was a case of keep right on driving her over the course for Bermuda. Tuesday proved far worse than Monday, and instead of occasional squalls, it was one continuous performance and the duties on deck became so numerous that we had to give up the regular routine and everyone stay on the job. I put on a suit of oilers and a "Neversink" life jacket, and I never had even a chance to change until Thursday morning.

Thursday noon we seemed to be surrounded by hurricanes, a large black circular cloud completely surrounded us with a yellowish center and it began closing in from all sides. Doc Street said, "Boys, here she comes, now every man look out for himself for we are in for a real blow." It came and all happened so quickly that I believed no one knew what did happen. A blast of wind struck the little boat and she quivered, then righted and in another minute a sea mountain high came over the bow and if it had not been for the nets some of us would surely have gone overboard. The boat seemed to stand on her stern hundreds of feet in the air and then another instant down in the valley, but she stayed right side up.

The engine stopped and as soon as we got our breath we found that both funnels had been washed away from over the engine room and the two engineers were pounding on the closed hatch to be released. They were the only ones who had lived below deck since Monday morning. Jake reported that the sea had struck the engine and put it out of business but would try to get her started again. Roland, Young and I stood by the sails while Doc Street held the wheel and tried to keep her head-on.

It was out with the sea anchor, hoist jib, lower jib, hoist mainsail and repeat. We became so exhausted that we had to call on Renner and the steward for help in handling the halyards and drag line. At 2 p.m. the engineers reported that they could not get the engine started and they were both sick from the strong fumes of gasoline, and the cabin was full of it. We then discovered that both feed-pipes from tanks to the two carbureters had been broken off and the gasoline was running into the bilges. The sea was tossing us about and it was almost impossible to keep her headed into the storm under sail. Everyone knew without being told that our fix was serious but not a man faltered, but we seemed to work that much harder. About dusk they succeeded in repairing one pipe, notwithstanding that the boat was rolling and tossing like an egg-shell. *Nineteen hours* we lay too, before we could get the engine started, for, after the first repairs, it took all that time to find that the pipe was twisted in the bilge.

The loose gas in the bilges prevented cooking and no one dared light a match. During the night I went below and helped the engineers pump the bilge. The odor was sickening, but life is too sweet to surrender without a determined try, so I stuck it out and at 3 a.m. reported that we had about all pumped out. We estimated that 100 gallons were wasted. Words cannot express the hardships of that night, and no one seemed to care much; one squall after another struck us. It got to be a joke when the skipper said, "Look out boys, here comes another blow." We were so used to being pounded about and tossed that it made little difference, and yet I do not believe anyone realized that we were hanging on to life by a mere cobweb, for at any minute the boat might be swamped and all go down; for I do not believe our dories could have been launched. And then we secretly feared that someone would forget and light a match.

Our food, all but raw eggs and oranges, were spoiled, and this it was we lived on until we went ashore Thursday night at St. George's Yacht Club, where we had the first meal since Monday. Not one of us had as much as washed up or shaved and everything was soaked, so it was impossible to put on dry clothes. Wednesday morning broke just as bad as Tuesday. Clouds, rains and squalls was the order and yet we had hope. We knew that we were out of the race, but now all we wanted was to live to see shore again.

We all knew that if the Dream was still on top, she had the race and we drank a toast of orange juice and raw eggs to their health and safety. What cared we about much of anything, for when a man was completely exhausted, he just dropped on deck and slept. We only hoped that the Dream crew was safe. At 8:30 a.m. Wednesday our engine was started again. Where were we? No one knew. How were we going to steer? No one knew. For we had been blown and tossed about so much that we didn't know which way to go. When we shut down Thursday we knew that we had covered 600 miles and that Bermuda was some place S. E. x S. of us.

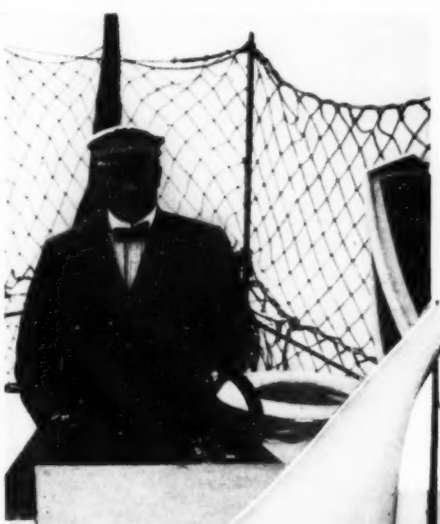
It was impossible to get any sights so we ran on and on and at 5 p.m. Dick Young got a sight when the sun peeped out for a few minutes. Before he could figure it up another squall struck us and we had to run E. ¾ S.

Dick figured that we were 32 miles west of Bermuda at 5:30 p.m. Wednesday. We all gathered ourselves together and the "old guard," Doc Street, Dick, Roland and I all keep a lookout for the light on St. David's Head. The weather was worse than nasty and it is impossible to describe it. Once it was as black as pitch with the wind playing music in the rigging. We kept on our course to the east, but luck seemed against us for we failed to make out a light, and in order to keep the ship right side up, it was a case of keep her going right ahead.

At between 2-3 a.m. the wind died down

(*Continued on page 65.*)

Wm. C. Smith, owner of Kathemma.



Kathemma's nest of dories and her steering gear. The dial is a course indicator for the convenience of the helmsman.

Kathemma had her stack and pilot house removed for the race. See the design on page 45.

The FLIGHT of the CROW

The crew paints

BY WILLIAM WASHBURN NUTTING

—so does the skipper.

Some Random Thoughts About Motor Power for Sailing Craft and the Possibilities of the Auxiliary as Illustrated by an Ordinary Cruise in an Ordinary Boat.

THERE was once a prejudice among cruising yachtsmen of the old school, God bless 'em, against the motor as auxiliary power for sailing craft. The spirit that prompted this was a certain sportsmanlike pride in the ability to go anywhere without assistance and a scorn for anything that in the slightest degree discounted this seamanship. Admirable as this seemed, it was a fallacy, for once a man can handle his boat, why should he refuse to take advantage of the opportunity of widely increasing her usefulness? Why should he punish himself for his lack of weather forecasting skill by sitting out a sweltering half-day's calm or by waiting for a favorable wind and tide to take him up some channel too narrow to allow him steerageway enough to tack against wind and current? The answer is, he doesn't. Nowadays the skipper of a cruising sail boat either has his boat built as an auxiliary in the first place or installs auxiliary power.

My friend, Capt. Lane, owner of the famous auxiliary schooner, Polar Bear, I think has the right idea. He splits about evenly between power and sail, and his boat is known the length of the Pacific Coast. She has been to Wrangell Island, north of Siberia, and it took both sources of push to get there. Many another unfrequented place in the high latitudes knows her and she has been chased by the Russian authorities of the Siberian Coast because of her captain's love of a practical joke—but they never got her. She travels equally well under power or sail and I believe her the ideal cruiser.

But there, I didn't start out to try to convert anyone to my pet views. I have an auxiliary and I wouldn't swap her for any other type. Combining as it does the advantages of both the sailing craft and the motor boat, in the stricter sense of the word, this class has hitherto received all too little recognition.

She's only a little black yawl, the Crow. A very ordinary little yawl, I was going to say, just about like many another, but she isn't just that either. There is a sort of individuality about her. Her design isn't much to talk about, but she was built by a man with a conscience.

I'd like to say that she had the long, sweeping line from stem-head to heel, that seems generally associated with the idea of seaworthiness, but she hasn't. I'd like to tell about her ample freeboard, her deep draft and the protecting bridge between cockpit and cabin, but she hasn't any of these either. She is 30 feet on deck by about 25 feet on the waterline and her beam is 9 feet. She is rather fine forward with a moderate overhang, somewhat like the knockabout Gloucester fisherman, veed sufficiently to prevent pounding in a sea, and her bowsprit is only about 30 inches long. The line of the keel takes a reverse curve about a third of the way aft and runs down to a draft of nearly 4 feet. The hollow iron shoe weighs about 1,300 lbs., enough to bring her up after a knockdown, and into this houses a long, shallow centerboard which, when swung down, gives that straight cutting edge so necessary to easy steering in tall water.

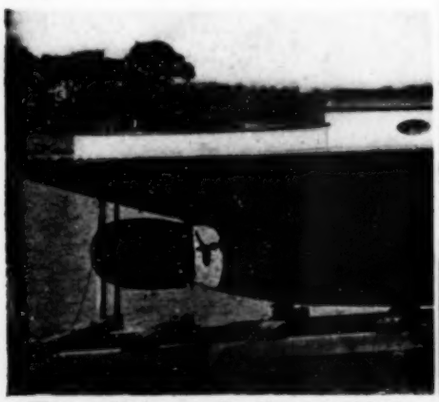
The 5-horse Fulton, that kicks her along at about five knots in calm weather and helps a lot at other times, is housed beneath a low hatch in the cockpit floor and is easily accessible by removing the companion steps. It is fed from a 20-gallon tank in the port cockpit locker and drives a two-blade propeller that lines up with the keel when not working. The carbureter is a Kingston and the combination has seldom failed me, no matter what the angle of heel or how severe the buffeting of head seas.

The Crow was bought for a long outside cruise, for I believe she could stand it, but on the eve of the start we lost our navigating officer and so the artist man and I started on a makeshift week's cruise to the eastward. We expected nothing from it, but like many another impromptu venture, the cruise proved a success—that is, if hardened hands and muscles, bronzed skins and settled nerves, the results of hard sailing, are any measure of success.

The painter comes of a Norwegian seafaring stock and sails by instinct. He sails as well as he paints, but his ability in these lines is in inverse proportion to his culinary prowess, and his dishwashing—well, it's impressionistic, to say the least. Above all, though, he's good-natured, and in the face of some catastrophe or long session at the pump that would call forth the skipper's stock of sulphurous language, dormant since cattleship days, he'd bawl some barbarous Alaskan chantey about once shooting a man, "so they say," and whose verses run on *ad infinitum*.

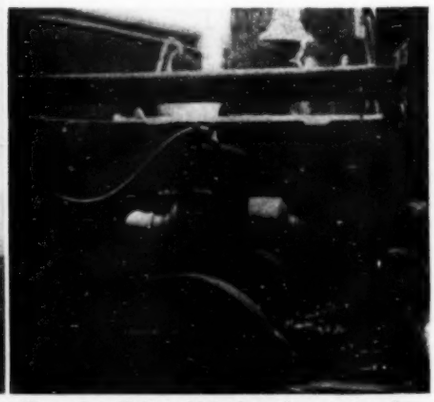
My pal of the palette had no objection to the outside route and so we shot out of Gravesend Bay one Monday evening at dusk, with a double reef in the mains'l and a piping nor'wester at our quarter, bound for Block Island, a hundred and thirty miles away—as the Crow flies.

We had come down the Hudson, past the Battery and through the harbor the day before.



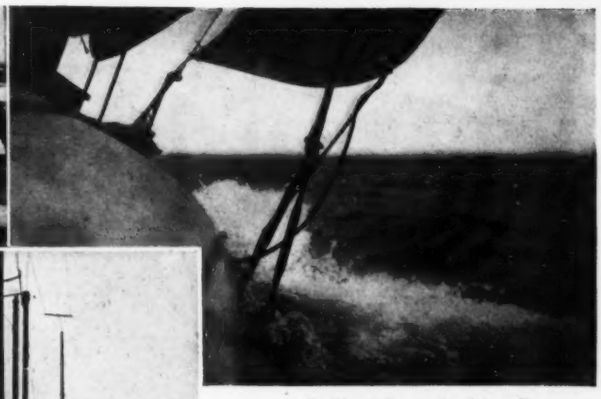
The two-blade propeller lines up with the keel when not working.

The 30-ft. auxiliary yawl Crow.



Her 5-h.p. Fulton kicks her along at nearly 6 miles an hour.

Practically the entire Block Island fishing fleet is now equipped with power. Note the "pulpit" on this sword fisherman from which the fish are harpooned.



Boiling along the lee rail.

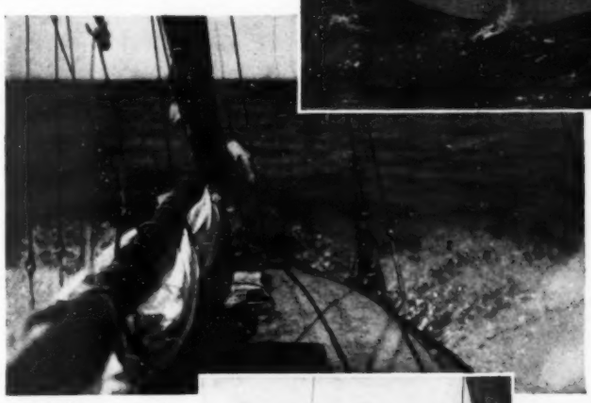
E-2, on right, a Diesel-driven submarine equipped with wireless.

but had held over all of Monday in Gravesend Bay to replace the bowsprit we had lost in a little encounter off the Battery.

Have you ever seen Coney Island from "the outside looking in?" It was a striking contrast that night to the black, mysterious Atlantic into which we were plowing. It's such moments that must pay a man for the time and money he has put into his boat, i. just fussing with her isn't payment enough. And it's the greatest sport in the world, this night sailing, laying your course by the lights and determining your position by their characteristics. Sometimes there are, when you've stood a long trick at the wheel, that you may think, with just a tinge of the intolerance that comes of envy, of the fellow who's taking his vacation in the orthodox way amid all the comforts of home, but once you've experienced these very hardships, you're lost forever, so far as the boardwalk and the hotel veranda are concerned.

As the lights of Coney and Rockaway dimmed astern, the wind went off duty for awhile and it took most of the night to pick up the flash of Fire Island Light, which we passed about six in the morning. A rising wind blew from the north and brought us abreast of Montauk Point, the eastern extremity of Long Island, shortly after nightfall, again with a double reef tied in the mains'l. Past the lee of the point the seas had many miles from the mainland in which to grow and had taken full advantage of the opportunity. Ghostly gray heads would come and peer at us for a second or two out of the darkness and then lose themselves astern in a hissing, boiling turmoil. The little Crow rode them well; there was none of the wet plunging of the sharp cutter bow nor the pounding of the modern full bodied craft—just a stately rise and scend at the same angle of heel. She just peeled them like a plow turns over the sod and it was seldom, indeed, that anything but spray found its way into the cockpit, which, by the way, has a scupper in each corner that took care of the few chunks of solid water that did flop in on us.

A power lobsterman fishing up his pots.



Bucking a head wind under power alone.

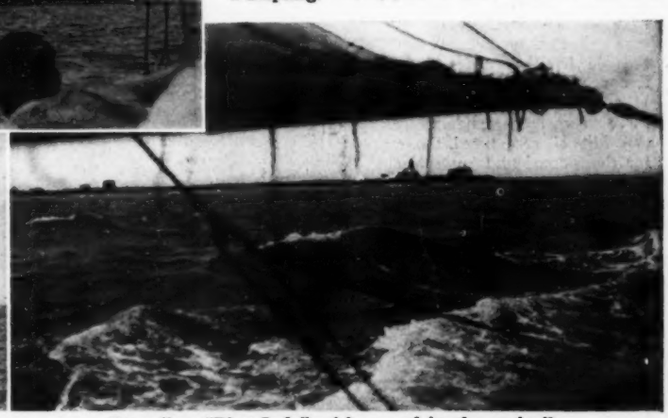
Reaching the lee of Block Island about midnight, we were some time bucking a strong tide off the Southeast Light. Finally rounding it, the wind and seas were at us again, and not being familiar with the Old Harbor, we kept our distance from the breakwater, preferring to coast back and forth until dawn rather than try to tack into the narrow entrance. With power it would have been easy to line up the range lights and take her in, but as a result of an encounter with a Hudson River log which had bent a blade of the wheel, our power plant was temporarily indisposed.

Gradually the gray heads grew more distinct as the horizon line in the east became visible, but even a Graflex camera working wide open can't do much toward catching them so early in the morning, although the one old fellow shown on the following page was caught in the charge.

We shot into the harbor and dropped the hook with tired eyes and muscles aching from the long watches at pump and wheel, just as the earliest of the fleet

The Dumpling.

The Crow hobnobs with relief lightship No. 20 in Fisher's Island Sound.

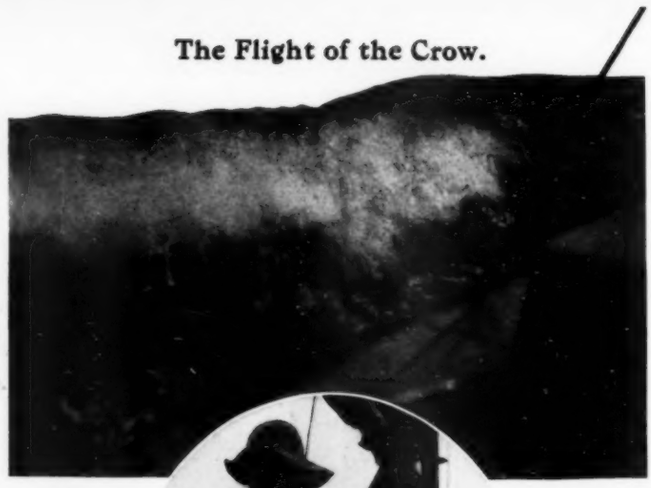


Rounding "Pint Jude" with a reef in the mains'l.

of power fishermen was chugging out to his day's work. We had been outside for 34 hours.

Sleep looked to us as the very best thing in the world that morning and it was afternoon and the fishermen were returning when we rowed ashore. Block Island's fishing fleet was a surprise. The motor is used almost exclusively; many of the boats are converted sailing craft, but a large percentage are modern raised deck motor boats. They are of sturdy build as their fishing ground is the Atlantic Ocean, and are as trim a lot of 25 and 30-footers as are usually to be found at the anchorage of a yacht club. Trained in the school of the sailing craft, their skippers are thorough boatmen; and expert with the motor, too, I should say, from the very noticeable lack of any trouble with the power plants.

No matter in what line of fishing these boats are engaged, each seems to be equipped with a "pulpit" for sword-fishing. The fish is literally "caught napping" and is harpooned by the man in the pulpit (just like many another lazy sinner) as he sleeps close to the surface of the water. It sounds sort of romantic as sword fish have figured so often in groundless sea stories, but it's the price the fish demand in the market, and not romance, that attracts the fleet, for New England is evry fond of sword fish.



Caught in the charge—an early riser trying to climb aboard the Crow.

The Painter.

I'd like to talk more about the remainder of this little cruise but it was through well-known waters and has been done frequently before. Compared to the flight of a former crow, that had after many adventures alighted upon the wreck of the old Sarah Wood off Cape Cod and had flown with her to the front pages of the Boston newspapers, this cruise was decidedly modest. No great excitement tempered the straight sailing diet or the continuous chug of the kicker unless our running the "blockade" of the battle fleet besieging Newport or our weathering a genuine Gulf Stream squall on Long Island Sound, could be called exciting. To be sure, there were lots of pleasant little incidents, such as our hearty reception at the Old Mill at Mattituck where the other Crow had once alighted and where the good cheer is both spiritual and material. And then there were the peaceful nights in quiet, little harbors, but these things will have to be sacrificed for more important things, and anyhow have little place among *random thoughts about motor power for sailing craft.*

Racing for the Gold Cup.

How P. D. Q. II, a "Dixie Junior", owned by Alfred Graham Miles, After Three Days' Racing, Successfully Defended the Trophy for the Thousand Islands Yacht Club, Beating Commodore Blackton's Baby Reliance by a Single Point.

By Harold Whiting Slauson.

Photographs by Edwin Levick.

WHEN a difference of but one point at the end of three days' racing served to make a winner of the defender of the Gold Challenge Cup, offered by the American Power Boat Association, one may be sure that this year's contest was close. Again, when but another point separates third and fourth places, one may reasonably assume that others than first and second of the contestants were well matched. But when, added to these close scores, is a series of incidents such as the sinking of one of the largest contestants and the halting finish of the speediest craft on "primings," it is certain that the races held at Alexandria Bay on the first three days of August were exciting. And this in marked contrast to previous years' contests in which one boat had everything her own way and had won each of the three days' races with the greatest of ease. For three years, under the old handicap rules, it was the successive Chips; then Dixie II and III swept the river for three years more; and last season Mit II recaptured the cup for the Thousand Islands Yacht Club when a broken water pump put Dixie IV, the defender for the Frontenac Yacht Club, out of the running.

This year, the old adage was proven, and the race was not to the swiftest. Defender P. D. Q. II's first and two second places won out by a single point over Commodore Blackton's Baby Reliance's fourth and two firsts. Clocklike regularity and expert handling of throttle and wheel defeated spectacular bursts of speed and whirlwind finishes. Baby Reliance, representing the Motor Boat Club of America, proved her speed superiority, for on eight out of the nine laps constituting the three days' races she finished ahead of all contenders; but an unforseen accident on the last lap of the first day shoved her back to fourth place, and under the weight of this handicap, it was impossible for her to win the cup—provided P. D. Q. II continued her splendid performance and obtained second position throughout the two successive days' contests. This proved to be the case, and while the special 150-horsepower Sterling engines of Baby Reliance served to bring her in ahead of the Dixie Jr., the defender, by 20 seconds, and 1 minute and 29 seconds at the completion of the second and third days' races, respectively, P. D. Q. II's 45-60 horsepower Sterling kept her equally well in advance of the rest of the field.

"The man worth while is the one who can smile when everything goes dead wrong."

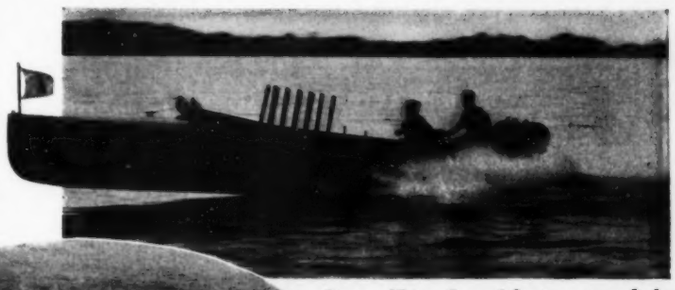
Count Mankowski and his 32-foot hydroplane Ankle Deep, which was sunk during the first day of the races.

The first day brought out all of the eight starters that had been scheduled to appear. With one exception, all of the contestants were single-step hydroplanes, varying in length from the 19-foot 11-inch Baby Reliance to the 32-foot Mit II. The exception was the Wasp, representing the Syracuse Yacht Club, which was a 26-foot Fauber hydroplane.

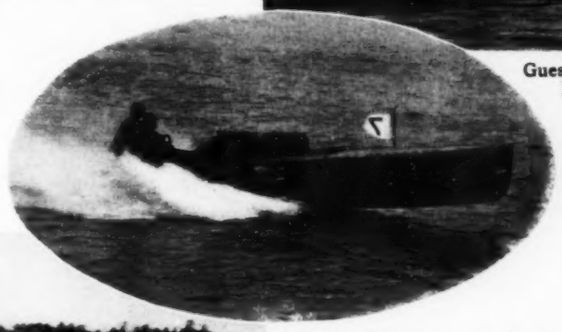
But the most interest attached to Ankle Deep, for its reputation for speed had preceded it, and this craft and Baby Reliance were the only two entrants that were new-comers to the Thousand Islands region. Furthermore, Ankle Deep had but just been launched from the Staten Island yards, and had never been "tried out" in a race.

For a short time, perhaps a

third of one lap, Ankle Deep lived up to her reputation—then she sank. She had arrived late at the scene of the races, and the judges had postponed the start half an hour in order that her two 8-cylinder Sterling engines could be tuned up. The starting gun sounded while she was still at the nearby boat-house of George C. Boldt, and she crossed the line a minute or so behind the rest of the field. Count Mankowski was at the wheel, Mr. Grennon minding the port engine and Mr. King the starboard. The boat almost immediately began to pick up on the rest of the fleet, which at this time was two miles in the lead, and on the home stretch of the first round, Mit II was passed and Wasp was being rapidly overhauled. The helmsman steered Ankle Deep directly astern of Wasp in the smooth water of her wake, and when within only 10 feet of Wasp's stern the Count tried to steer out to pass her, he struck the Wasp's side wash, and not being experienced in the art of handling a hydroplane in such a position, the little craft got the better of him and capsized, throwing the crew overboard with much force. That put the mighty Ankle Deep out of future contests of the series, for she was naturally unable to complete that day's event. She was rais ed and towed ashore next morning

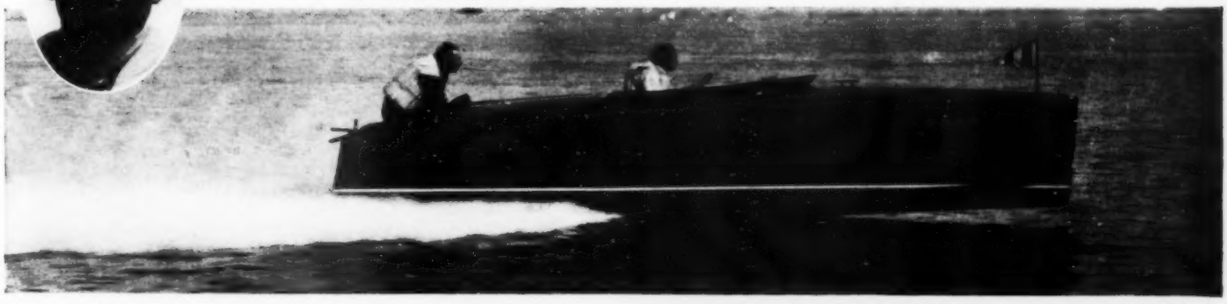


Guess Not, the 26-footer owned by H. F. Denny and driven by two 6-cylinder Watertown motors.



Baby Reliance, one of several of the same name owned by Commodore Blackton. This one is equipped with an eight-cylinder Sterling motor.

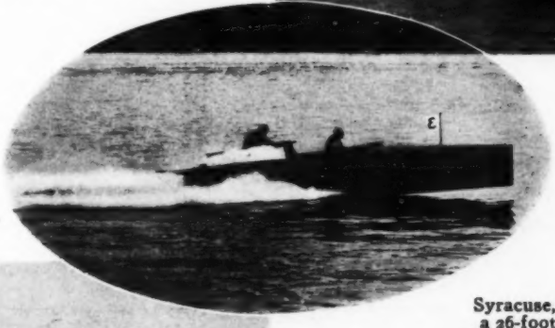
Wasp, a Fauber hydroplane, driven by two Leighton motors.



Alfred Graham Miles, owner and pilot of P. D. Q. II, and his 20-footer that successfully defended the cup.

Bear Cat (whatever that means) dropped from the race on the next lap on account of a hot engine bearing, and the promising little Dixie Jr. also took her place on the retired list. Mit II, last year's winner of the cup for the Thousand Islands Yacht Club and this year representing the St. Lawrence River Yacht Club, passed the scene of the accident soon after the overturning of Ankle Deep, and stopped to take on her bedraggled crew. She left the disappointed Count and his mechanicians at the judges' boat at the finish of the first lap, and then continued on her course. For this act of charity, last year's winner was forced to be content with fifth place. As events proved, however, she would not have been a serious contender had no accident happened to the Ankle Deep; for, while she ran each round with remarkable regularity and steadiness, her strong point is seaworthiness rather than high speed. As the river, during all three days of the races, was comparatively calm, Mit II was handicapped by unnecessary weight, beam and length, and her wave-resisting qualities were not called upon.

Bear Cat, another of the Dixie Juniors.



Syracuse, a 26-foot single step hydroplane whose motors aggregate 200 h.p.

The old reliable Mit II, driven by an 8-cylinder Sterling, won the cup last year for the Thousand Islands Yacht Club.

While the crew of the Ankle Deep was consorting with the fishes, and Mit II was proving to be the Good Samaritan of the race, the finish of the first lap by the remainder of the contenders had been going merrily on. Although a late start had put Baby Reliance a full half minute in the rear when the tape was crossed, she completed the first round 23 seconds in advance of P. D. Q. II, and increased this lead to 1 minute and 4 seconds at the finish of the second lap. With but one more round to make before the finish of the first day's race, Baby Reliance seemed a safe and certain winner.

But it was not to be. Baby Reliance encountered one of those well-known slips that are often to be found 'twixt the cup and the challenger. When well down on her last round, Helmsman Ryan throttled suddenly. The carbureters on her powerful eight-cylinder motor had been adjusted for the weak mixture necessary for high speed, and the natural result of the sudden checking was violent backfiring and crankcase explosions. A base plate was blown off, and the oil was thrown in all directions. Baby Reliance still had a substantial lead, and it seemed possible to win by running slowly. But the backfiring continued, and finally the gasoline in her carbureter caught fire. When this was extinguished,

Specifications of the Racers.

Boat.	Length.	Owner.	Type.	Motor.	Cylinders.	Power.
P. D. Q. II.	20'	A. G. Miles	Dixie, Jr., single screw, single step, Crane design	1 Sterling	4	80
Baby Reliance	19' 11"	J. S. Blackton	Reliance, single step, single screw, Smith-Ryan design.	1 Sterling	8	150
Guess Not	26'	H. F. Denney	Single step, twin screw, direct drive	2 Watertown	12	100
Wasp	26'	Wm. Taussey	Fauber, twin screw, built by Leyare	2 Leighton	12	200
Mit II.	32'	Harold Hayden	Single step, single screw, built by Hunt	1 Sterling	8	100
Syracuse	26'	Wm. Taussey	Single step, twin screw, built by Fry	2 Leighton	16	200
Bear Cat	20'	Herbert Coppel	Dixie, Jr., single screw, single step	1 Sterling	4	90
Ankle Deep	32'	Count Mankowski	Crane design, twin screw	2 Sterling	16	200

it was found that the fuel pipe had become clogged—and the finish was still a hundred yards away. The four-mile-an-hour current of the American channel was against her, but to qualify for the successive contests, Baby Reliance must finish under her own power. The desperate mechanician primed his carbureters and cranked, the tiny plane gave a few vigorous snorts, shot ahead thirty yards—and stopped. Three times was this repeated, and finally, under the impulses from her last priming can of fuel, she drifted across the line a safe fourth in a race that had previously been "all her own way."

In the meantime, P. D. Q. II, with her owner, A. G. Miles, at the wheel, had finished first, 4 minutes and 38 seconds ahead of Guess Not, which had, in turn, beaten Wasp by 2 minutes and 3 seconds. 7 minutes and 21 seconds after P. D. Q. II finished, Baby Reliance crept across the line. She was followed more than ten minutes later by Mit II.

Syracuse, the 26-footer driven by two 8-cylinder, 100-hosepower Leighton engines, finished sixth, being unable to take advantage of her high speed possibilities because of the difficulty her pilot experienced in keeping her under control. Her throttle arrangements had been changed previous to the race, and unfamiliarity on the part of the pilot with this new order of affairs caused her to make eight complete turns on the straightaway of one lap. In spite of this trouble, she entered for the second day's contest, but again finished fifth and was withdrawn from the final race.

The results of the first day's race formed a basis for predictions as to what would be the conclusion of the contests. Baby Reliance had proved herself—for two laps—to be the fastest craft entered, but her mishap on the first day had given P. D. Q. II the better chances for winning the cup. With no future accidents, the "dopesters" could figure the results but one way—and for once, at least, they proved right. Baby Reliance won the second day with P. D. Q. II but 20 seconds behind. Guess Not, Wasp and Mit II followed in the order named. An even 18 minutes separated the first and last of this day's contest. According to the scoring, which gives—with eight starters—eight points to the winner, seven to second place, etc., throughout each of the three days' races, P. D. Q. II led Baby Reliance by two points, while the same difference stood between Guess Not and Wasp for third and fourth places, respectively.

The starting time of the last day's contest found a choppy sea running, for a strong nor'easter had been blowing against the current all day, and had made conditions rather ominous for the two leading 20-footers. In fact, the weather seemed to favor Mit II, for her length, weight and size made her especially adapted to hard blows and heavy seas. But the wind quieted somewhat toward the start, and left just a sufficiently heavy sea running to enable Ryan's Challenger and Miles' Defender to test their wave-bucking qualities. The results showed that moderately heavy weather does not bother these tiny 20-foot speed wonders, for P. D. Q. II ran within 3 seconds of her previous day's time for the 32 miles, while Baby Reliance bettered her speed by a finish 1 minute and 6 seconds ahead of her time for the second race. On this day, however, Guess Not and Wasp had exchanged places, the latter finishing third 2 minutes and 52 seconds ahead of her successful rival for the two previous races. This exchange of positions, however, did not affect the final places of the two boats so far as points were concerned, for Guess Not retained third by a margin of one point over Wasp.

In view of the recent performances of hydroplanes, the speeds attained in the American Power Boat Association's Gold Challenge Cup Races were not particularly remarkable. The highest speed averaged by winner P. D. Q II for the 32-mile course was 37 miles an hour, made on the first day. Baby Reliance bettered this speed on the second day by about three-tenths of a mile an hour. The fastest lap made by this black 20-footer was at the rate of 39 miles an hour if 35 seconds for a late start is deducted from the official records. In considering these speeds, however, it must be borne in mind that the 32-mile course included five sharp turns which could not be taken at full speed. One lap consisted of a five-mile run down the river from an imaginary line—extending from the head of Hart Island to a buoy placed on the Crossmon House dock at Alexandria Bay—and return. The lower end of the course was formed by buoys placed opposite Ironsides Island, the complete lap constituting 10 2/3 miles. Three times around this course formed the 32 miles covered in each day's race.

But, although record-breaking speeds were not attained, the races were remarkable as a demonstration of the precision and regularity with which the tiny planes could cover long distances. The well-deserved success of P. D. Q. II was due to this fact alone, for not once during the 96 miles of the three days' racing did her cylinders miss an explosion. There was but 1 minute and 12 seconds difference between her fastest and slowest time for the 32 miles. With the exception of the first day—when she went to warn Ankle Deep, still motionless at her boat-house, of the impending firing of the starting gun—she was over the line at the dot; and in this, as well as in the manner in which she saved time at the turns, she exhibited the results of the expert handling of her owner, A. G. Miles, and his mechanician.

The winning defender was a stock model Dixie Jr. slightly modified, provided with a four-cylinder, 90-horsepower Sterling engine located in a cockpit at the stern. In these craft the propeller shaft is geared to the crankshaft of the motor at the forward end, and extends under the base of the motor. Propeller shaft and motor are thus both set nearly level, and the former revolves at a higher speed than does the crankshaft to which it is geared. The steersman's cockpit is forward of the motor, and there is thus no danger of the exhaust gases being blown in his face.

The arrangement of the Baby Reliance is just the opposite, for in this craft the motor is placed in the forward cockpit and the pilot sits at the stern. The overhead valves of the 8-cylinder, 5½ x 6¼ Sterling engine give to the power plant the appearance of being top-heavy, but in none of the races was there the slightest indication that such was the case. On the roughest day, the 20-footer rode the waves almost as steadily as did her 26-foot rivals, and it was difficult to realize that nearly 200 horsepower was concentrated in the tiny craft. Baby Reliance, together with P. D. Q. II, Bear Cat and Mit II formed the single-screw division of the contestants, each of the other four being driven by twin engines.

As an evidence of the strides that have been made in motor boat and engine design, during recent years, it is interesting to note that the Gold Challenge Cup was first brought to the Thousand Islands eight years ago by the Vingt et Un, which obtained its name from its ability to attain the then remarkable speed of 21 miles an hour.

P. D. Q. II was somewhat modified from the original Dixie Jr. type and the change was found to be a decided improvement in her performance. Not the slightest tendency to overturn was felt and the passage through the waves and wakes of the large passenger steamers that ply over that part of the St. Lawrence River was performed with little difficulty. The forward plane was somewhat broadened to give a wider bearing on the water.

Results of the Gold Cup Races.

Boat.	Club.	First Day					Second Day					Third Day					
		First Lap. (10⅔ Miles.)	Second Lap. (10⅔ Miles.)	Final Lap. (10⅔ Miles.)	Total. (32 Miles.)	First Day Points.	First Lap.	Second Lap.	Final Lap.	Total.	Second Day Points.	First Lap.	Second Lap.	Final Lap.	Total.	Third Day Points.	Total Points.
P. D. Q. II	Thousand Islands Y. C.	17:05	17:34	17:33	52:12	8	17:21	17:50	18:10	53:21	7	17:49	17:46	17:49	53:24	7	22
Baby Reliance	Motor Boat Club of America	16:42	16:30	26:21	59:33	5	16:55	17:53	18:13	53:01	8	17:17	17:46	16:52	51:55	8	21
Guess Not	Clayton Yacht Club	18:52	18:57	17:51	56:40	7	18:38	20:18	17:21	56:17	6	19:03	19:10	18:59	57:12	5	18
Wasp	Syracuse Yacht Club	18:35	21:23	18:45	58:43	6	18:10	19:21	23:55	58:26	5	18:12	18:10	17:58	54:20	6	17
Mit II	St. Lawrence River Y. C.	*26:00	23:22	20:50	1:10:12	4	20:30	21:02	21:00	1:02:32	4	20:31	21:00	20:54	1:02:25	4	12
Syracuse	Thousand Island Park Y. C.	19:46	23:36	Fin. after sundo'n		3	24:22	23:12	21:13	1:08:47	3	Did not enter on last day.					
Bear Cat	Chippewa Yacht Club	18:12	Eng. trouble; out of race.														
Ankle Deep	Lake George Regatta Association	Sunk on first lap.															

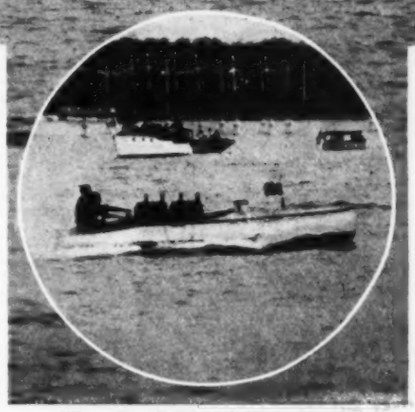
*Stopped to take on Ankle Deep's crew.

Cadillaqua Championship

The Destruction of Neptune Free-for-All by and the Winning of the 40-Mile Kitty Hawk II.

KITTY HAWK II, a 26-foot hydroplane, owned by H. H. Timkin, of Akron, Ohio, won the 40-mile free-for-all Cadillaqua championship race at Detroit, on Thursday, July 25. Eph, a 40-foot displacement boat, owned and driven by Carl G. Fisher, of Indianapolis, came in second, both boats having run consistent races. The only other entrant was Lawrence Buhl's boat, Neptune, which was sunk in the first lap when she hit a swell from the fast steamer, Northland.

The race promised to be one of the fastest and most fiercely contested ever run on the Great Lakes, if it had not been for the accident to Neptune, as Ryan, her maker, claimed that she could beat Kitty Hawk, although the Akron boat had beaten one of Ryan's boats in another race. Judging from the little the spectators saw of the race, it looked as though the Algonac builder was going to make good. Kitty Hawk and Neptune were on even terms when the starting signal was given, but as Neptune had some trouble starting her motor, both Kitty Hawk and Eph got away ahead of her. It didn't take her long, however, to follow and she chased Kitty Hawk down the river, gradually gaining, until she rounded the first stake. Watching from the American side, Neptune was the first to disappear, with Kitty Hawk making a desperate struggle to gain the lost distance.



Kitty Hawk II and Neptune, the unfortunate.

It was with deepest regret that the spectators saw Kitty Hawk beating it down the course alone, except for the Eph, and it was felt that something had happened to Ryan and his Neptune. As Fisher passed the judges' stand he slowed down, and motioning with his hands told the judges that Neptune had turned over.

Kitty Hawk was, of course, an easy winner, and no startling time was made by either of the finishing boats. Forty miles is a long pull and many of the spectators feared that the hydroplane couldn't stand the strain, but she did. Fisher lost some time by slowing up when he reached Ryan and his mechanician, Jay Smith, who were swimming for shore after Neptune went down; but Ryan waved him on as both men had on life preservers.

The accident to Neptune, it is claimed, was caused by Ryan's taking a chance. The big steamer, Northland, was coming down the river on the Canadian side at full speed, and throwing five-foot swells. Ryan chose to ride the swells, rather than slacken up and thus allow Kitty Hawk to gain what she had lost at the first stake, but the second swell from the big steamer swamped and crushed the little boat and Ryan and Smith jumped. The police patrol picked up three small pieces, all that was left of what promised to be one of the fastest hydroplanes on the Great Lakes.

In the 16-mile hydroplane race, Neptune won first place, and Carl G. Fisher's boat, Eph, easily won the 16-mile displacement championship.

A few of the pieces of Neptune picked up after she hit the swell of the steamship Northland.

Another International Trophy.

OTTO HEINS, president of the Bosch Magneto Company, New York, has presented to the Motor Boat Club of America a trophy to be raced for in connection with the Harmsworth Trophy Races. The trophy will be known as the One Mile International Record Trophy and will be contested for annually.

It is to be contested for by all foreign and American sportsmen who believe their boat sufficiently fast in a one-mile dash to carry away the trophy. The winner each year will be given a smaller replica of the trophy by the donor.

There are no restrictions concerning the trophy, excepting the rules governing motor boat racing in general. All boats, whether foreign or American, and which are 40 feet or under in length, may enter the contest to decide the fastest boat in the world. The Admiralty rules for deciding the mile dash shall prevail.

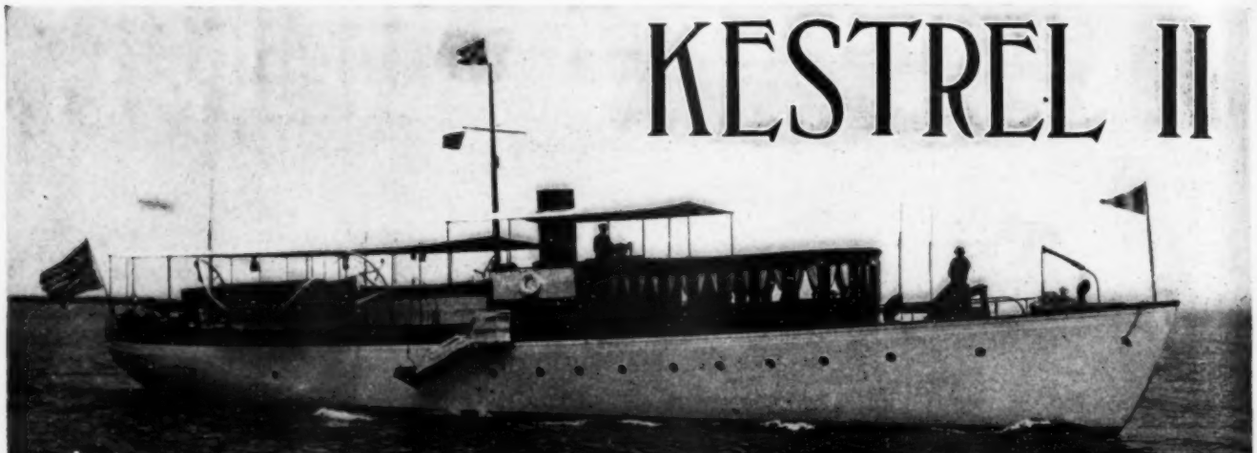
The One Mile International Record Trophy will be turned over to the Motor Boat Club of America as soon as completed, and the deed and conditions under which the trophy will be contested for, will be forwarded to all National and International clubs desiring to enter the competition or extend a challenge.

The Otto Heins One-Mile International Record Trophy.

It is expected that the announcement of the Heins trophy will create quite a stir in International motor boating circles, as it will provide a final contest where the fastest boat in the world will be decided each year, and as there are usually many claims for this honored title, the competition for the trophy this month will surely produce a large list of contestants.

The Gorham Manufacturing Company of New York will construct the huge trophy designed by the Bosch Magneto Company, and expect to turn out not only a handsome and appropriate trophy, but one even larger and more handsome than that given by Otto Heins last year and won by the Dixie IV, after defeating the English challengers.

KESTREL II



A New 107 Foot Motor Yacht

KESTREL II was built early this season for Mr. Edward F. Caldwell, of New York, from designs by Morgan Barney, by the Eastern Shipyard Co., of Greenport, L. I. In many respects she is similar to Kestrel I, with such improvements as were possible, due to her increased size. The special features of the boat are her ample decks, large dining-room and comfortable living quarters, which are combined with a very seaworthy model, good cruising speed with relatively small horsepower, and unusually strong and heavy construction.

Specifications of Kestrel II.

Length over all	107 feet.
Length on the waterline	95 feet.
Extreme beam	18 feet, 3 inches.
Draft	5 feet, 3 inches.
Power Plant	two 6-cylinder 75-90 H.P. Standard Motors.
Cruising speed	11-12 knots.
Designer	Morgan Barney, New York
Owner	Edw. F. Caldwell, New York.
Builder	Eastern Shipyard Co., Greenport, L. I.

The owner's quarters consist of a dining saloon on deck, 22 feet long by 16 feet wide. From the after end of this a stairway leads to a library, and opening off this are two large double staterooms with a bathroom between.

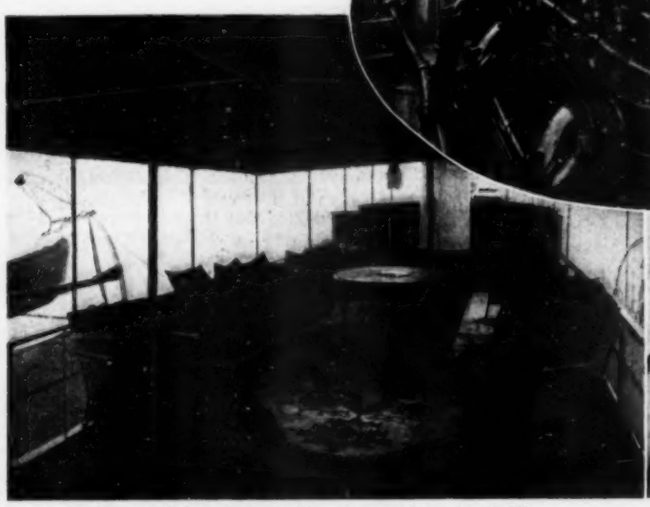
Aft of the owner's room which extends across the full width of the vessel are two single staterooms and companionway to the after deck. The deck house is finished throughout in mahogany, and the after cabins are finished in the same way up to a line 2½ feet above the floor, above which the finish is white enamel with the doors and door trimmings in mahogany. The yacht is furnished in excellent taste, Mr. Caldwell having given the details his personal attention. The electric light fixtures, mirrors and various pieces of ornamental metal work are of the owner's design, and add greatly to the individuality of the interior.

The crew's quarters consist of the captain's and engineer's room, galley and fo'c's'le for four men. The machinery is located between watertight bulkheads amidships, and besides the two 6-cylinder Standard motors, includes a direct-connected electric light plant of 5-k.w. capacity, Edison storage batteries, and electrically operated pump for pumping water from the main tanks below the cabin floor to the gravity tank under the bridge. The yacht carries one thousand gallons of gasoline and the same of water. Space has been provided elsewhere for the necessary stores and provisions for extended cruising. A 21-foot launch and a 14-foot cutter are carried on davits.

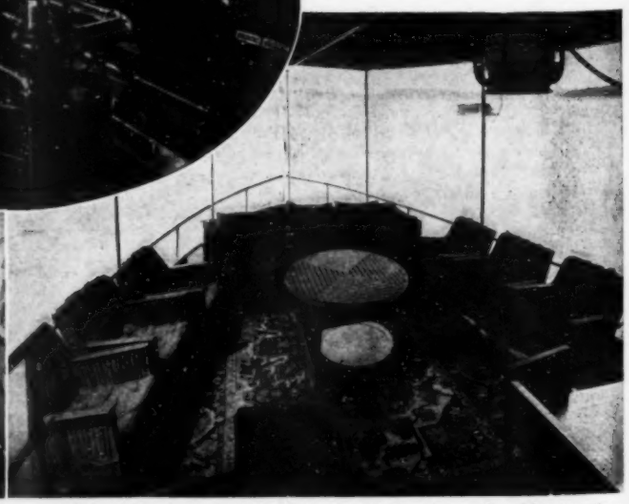
Kestrel has already proved herself an exceptionally able vessel and most satisfactory in every particular. Her cruising speed is between 11 and 12 knots, and her gasoline consumption is relatively low.

The design is interesting as illustrating the possibilities of the gasoline yacht of large size. In Kestrel the owner has the room and comfort and luxury of a 150-foot steam yacht at a relatively low first cost and subsequent cost of operation and maintenance. Also, as compared with gasoline-driven yachts of her size, her accommodations, due in part to her great beam, are only equalled by the slower speed houseboats. Her design is a development from a series of cruising boats designed by Mr. Barney with the result that, notwithstanding her beam, she

The two 6-cylinder Standards.



The midship deck looking forward to the bridge.



The after deck protected by the bulwarks and cabin trunk.

drives easily and smoothly, and her metacentric height is so fixed by a definite distribution of her hull, weight and machinery that she is a steady vessel under all conditions of weather.

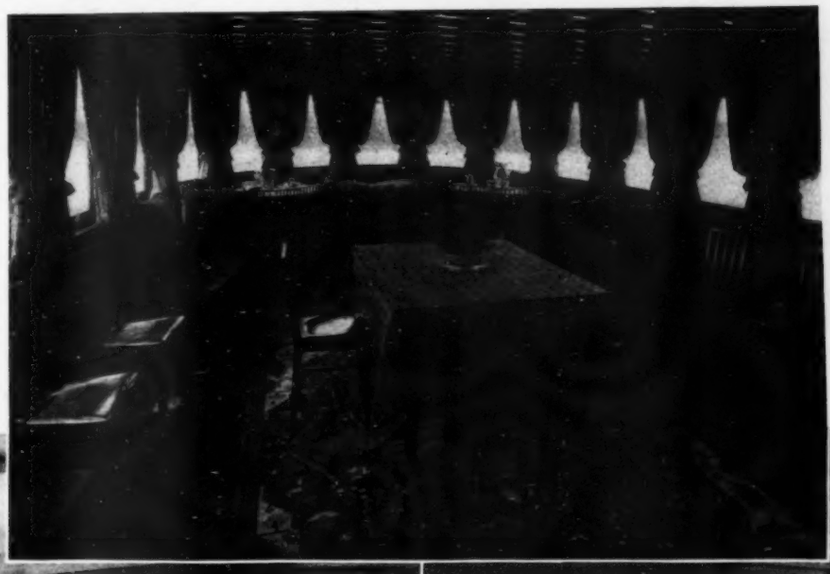
An interesting feature of the boat is that while her deck is raised forward there is no break in the sheer line, the sides being carried up aft as bulwarks. The floor of dining saloon is level with the after deck.

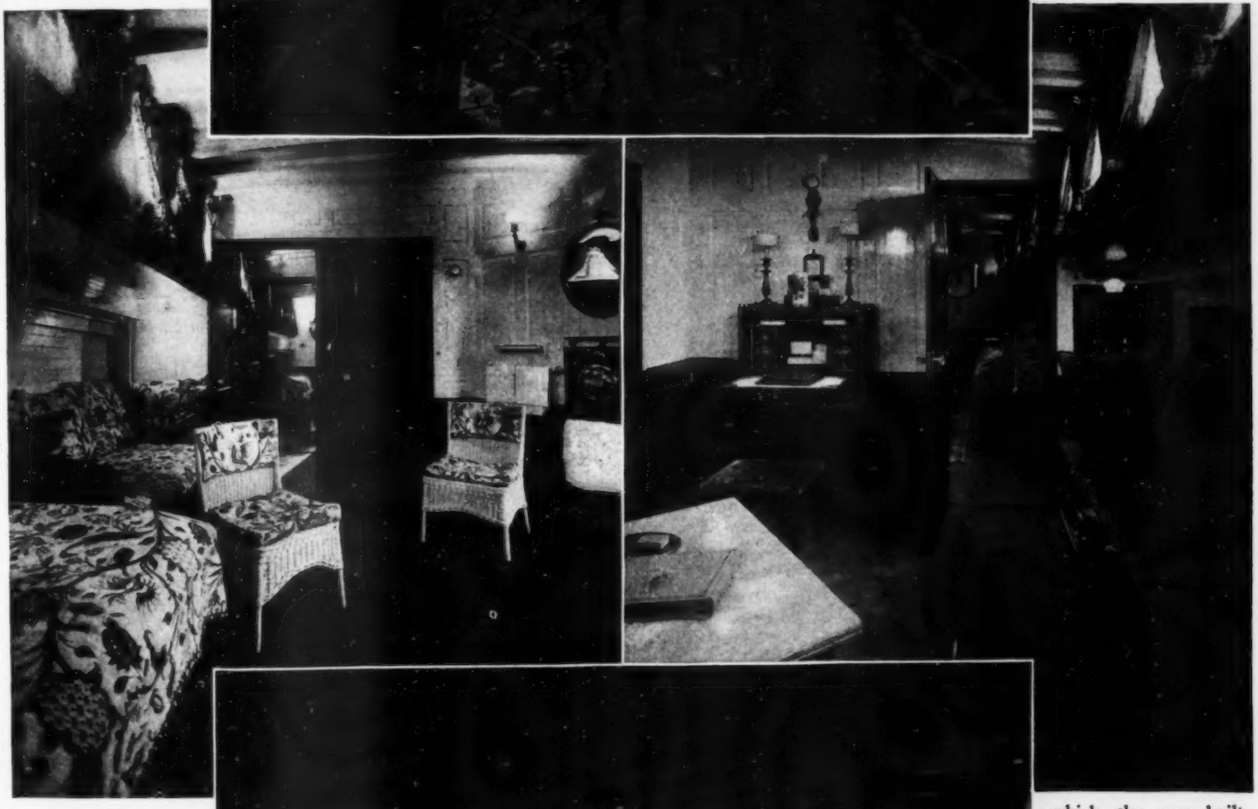
Kestrel is an excellent example of the type of craft that has been so rapidly superseding the small ocean-going yacht. In planning her, the desire for speed has not been permitted to cut her beam down to a point where she would become unsafe for rough water work and she is therefore capable of making those long outside runs which are the delight of the real motor boatman. For coasting trips, a boat like Kestrel has no equal, and when it is considered that on a run of this kind, the owner is more than apt to want to put in at the various harbors along the route, a motor cruiser is unquestionably superior to a steam yacht which has to keep her fires going whether she is under way or not. While possessing all the advantages of a motor-driven vessel, Kestrel resembles her steam-powered sister very closely. The unbroken sheer line mentioned above helps to produce this effect, the sunken deck house giving the impression of the conventional pilot house is also instrumental in carrying out the idea. In short, her trim lines and handsome appearance, combined with her tasteful and comfortable quarters below decks, make her an ideal craft of her size.

Kestrel was built in five months and was ready for delivery on the date contracted for by her builders. The work was carried on under the supervision of the architect and all the details of construction were carefully planned to meet the requirements of durability in the service for which she was built. Her home port is Larchmont, N. Y.

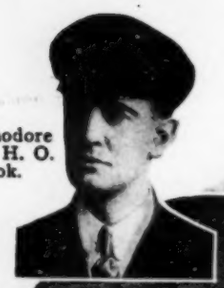
Although the over-all length of this boat is 107 feet, and larger motor driven boats have been constructed, she seems to be almost up to the present limit of length, beyond which it is hardly practical to go in motor yacht construction. It seems to be the case that two motors of the size of Kestrel's, give better satisfaction than running into much higher powers, where other problems and complications arise and where the economy of gasoline becomes less evident. With the advent of the Diesel for yachts, and its cheaper fuel, the practical size of this type of motor vessel will increase without limit.

The dining saloon is in the deck house, which is sunk to decrease the apparent height of the structure.



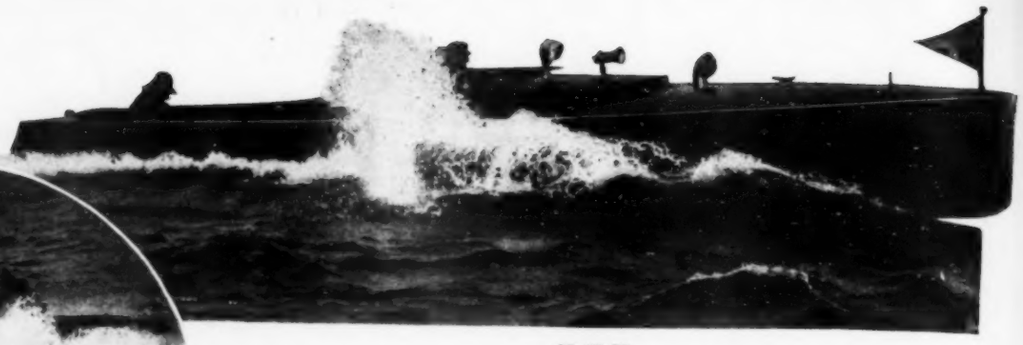


Several views showing the individuality of Kestrel's interior, the decorative features of which were designed by her owner. It will be seen that all the living quarters are lighted and ventilated by windows in the cabin trunk.



Commodore Chas. H. O. Pook.

Gadfly III.



Nulli II.

Great Lakes Meet.

The Three Days Racing of the Great Lakes Power Boat League Held at Hamilton, Ontario, by the Royal Hamilton Yacht Club. The Ideal Course and the Keen Enthusiasm of This Body of Sportsmen.

By Chas. F. Chapman.

WHEN the G. L. P. B. L., last winter, elected Charles H. O. Pook, of the Royal Hamilton Yacht Club, commodore of that body of motor boatmen, and automatically chose Hamilton, Ont., as the location for the 1912 meet, two of the wisest moves possible were effected. No more efficient and enthusiastic leader than Commodore Pook sails those great inland waters, and no spot that we know of on those waters is more suitable or better adapted for motor boat racing than the course laid out in the home waters of the Royal Hamilton Y. C. Fourteen clubs between Duluth and Rochester are members of the league, and each did its share to make the meet a success. The Royal Hamilton Y. C., with its 600 active members and its magnificent clubhouse, as well as its immense amount of real club spirit and enthusiasm, opened its doors wide and gave everyone a glorious welcome.

Hamilton is located at the extreme western end of Lake Ontario. Some 5 miles south of the city a narrow strip of land 5 miles in length extends completely from one shore to the opposite with only a narrow canal connecting the outer and inner portions of the lake. On the southeastern shore of this canal is situated the home of the Royal H. Y. C., with piers extending both into Lake Ontario and Hamilton Bay, as the inner body of water is called.

No more ideal water could be desired for high speed racing as nowhere in the bay is there the least difficulty from shallow water and the permanent 5-mile triangular course laid out is absolutely protected from the winds from every quarter and the racers are not compelled to pass a single steamboat channel nor course. It was not the desire of the officials to lay out a course simply for this particular meet, but one that would be of use at all times for the members to try out the speed of their boats and settle local dispute. This policy has done much to promote racing and speed boats in the Canadian club, and could be copied to advantage by every club. Several of the visiting yachtsmen were visibly disappointed at the performances of their boats over this accurate course, after being able to maintain an apparent 5 or 6 knot greater speed over a course laid out by guesswork, and a few of them went home after the racing sadder, but wiser men.

The course, measuring 1.83, 1.68 and 1.51 statute miles on the respective sides, was surveyed on the ice and buoys put down at that time. Lest some error might had occurred due to the marks shifting when the ice went out, a steel wire was recently stretched tightly around the triangle by a special device on boats and the course was found to be 800 feet too long. Substantial buoys were permanently anchored at the 3 vertices, visible from the committee boat, at the finish line, which made the stationing of an observer at the turning marks needless.

Several incidents happened during the regatta of a very exciting and spectacular nature and might have resulted in serious accidents, had it not been for the presence of mind of those in the boats at the time.

In the second heat of the 3 miles "free for all" on the first day something happened which was not on the program and may never occur again in a lifetime. This course was a straightaway, 1½ mile down with a turn, and 1½ mile back to the starting line. The three starters got away in good shape at the crack of the gun and were well bunched at the turn with Heloise leading and U U IV lapping her. The former put her wheel over too suddenly, which threw out both of the crew as though they had been shot from a cannon. The racer righted herself in an instant, and started off at a 30-mile clip with neither helmsman nor engineer. The turn was made, leaving the buoy to port, but Heloise' left-hand wheel caused her to sheer off to starboard, and, describing a circle some 50 yards in diameter, she went round and round with little change in position. The other two racers immediately put about and rescued her crew from the water, and, fifty or more boats seeing her plight from the shore, immediately hastened to the scene.

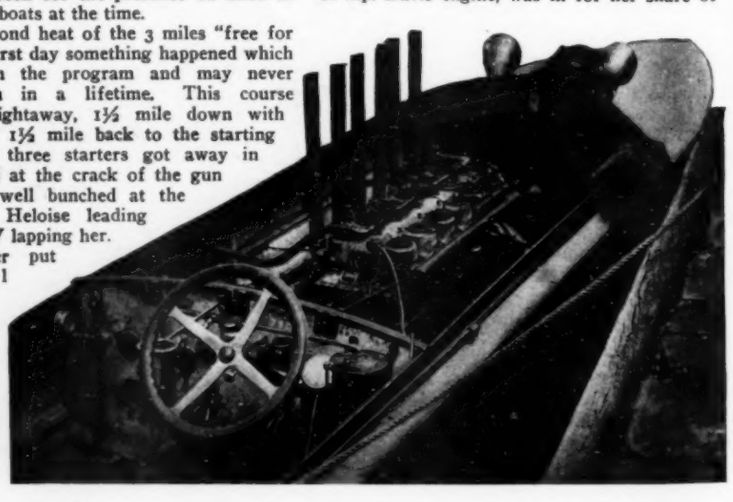
As the runaway was by far the fastest boat, no one dared to close in on her, as to get in her way meant a sure trip to the bottom, and, like a lot of cowboys in an attempt to rope a wild steer, the boats kept at a safe distance and watched the weird sight.

For 27 minutes this kept up until Mr. Croft, owner of Loew Victor II, by a skillful series of maneuvers with his hydroplane, brought the sterns of the two boats almost together as they passed, and Mr. Johnson, one of Heloise's own crew, who was aboard, made a wild leap, just catching his craft by the gunwale as she dashed by, pulled himself aboard, and threw off the switch. Nothing was damaged and one turn of the crank was all that was necessary to get under way again, but this time Heloise was under full control.

Marjorie, owned by A. G. Penmars, of Toronto, a 36-foot displacement boat with a 60 h.p. Davis engine, was in for her share of

THE BOATS

Name	Owner	Length	Engine	H.P.	No. of Cyl.
U U IV	W. A. Wickwire	26	Van Blerck	125	8
Marjorie	A. G. Penman	36	Davis	60	6
Alice Mary II	F. E. Houston	32	Sterling	30-45	4
Elanor	R. S. McLaughlin	35	Sterling	45-65	6
Vesta V	J. T. Tegler	25	Can. Fairbanks	12	2
Gadfly III	H. B. Grenning	32	Niagara	100	6
Lucille	W. E. Taylor	36	Defiance	14	4
Ethel K	K. Bethune	22	Hamilton	8	2
Nullie	J. P. Bicknell	35	Sterling	35-55	6
Wannetta	W. S. Duffield	28	Sterling	18-25	4
Flora M	E. J. Leith	21	Fairb-Morse	5-7	2
Daisy	R. Wilson	31	Cand. Fairbanks	12	3
Generva	W. Field	22	Fairb.-Morse	5-7	2
Osceola	W. H. Mullin	18	Fairb.-Morse	3	
Bug	C. K. Jutten	25	Gray	12-14	2
Philomel	W. G. Smart	25	Hamilton	40	4
Annie II	C. Jennings	18	Gray	6	2
Dolphin	N. Pilgrim	25	Fairbanks	5-7	2
Shamrock	R. Y. Eaton	35	Sterling	45-65	6
Loew Victor II	E. Croft	26	E. Croft	6	60
Heloise	W. H. Gooderham	26	Wolesley	8	60
Cyprus	Monk, Palmer & Blatz	40			



The bulkhead controls and the 60-h.p motor of Loew Victor II.

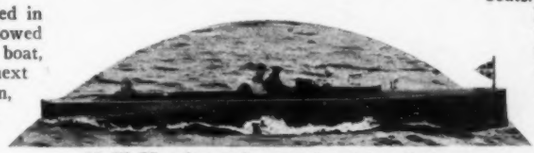
the hard luck. While making the 30-mile run from Toronto to Hamilton on the opening day in the teeth of a southeaster, her engineer was stricken with an attack of appendicitis, and fell unconscious in the bottom of the boat. A large lake steamer was signalled, picked up the invalid and attempted to take the speed boat in tow. Like most of her kind she had a light, brass 6-inch cleat, many feet aft of the bow, without any chocks forward, and when the steamer speeded up a little, Marjorie promptly went broad-side, filled up, her entire forward deck let go, and steamer, painter and deck went on.

A boat sent out from the club succeeded in finding the partly submerged racer and towed her in. All hands worked hard on the boat, but it was not until the last race of the next day that she was in shape to run again, and then when she was approaching the line thirty seconds before the starting gun, an 18-foot open boat, containing three ladies, three children, and one lone man, borrowed for the day, sailed into the course and Marjorie ran into her, crushing in her sides as though they were so much paper. Mr. Penmar had presence of mind, however, not to draw away until the seven people aboard had scrambled over the turtle deck of his unfortunate boat. The racer was only slightly damaged, but was sent away to the repair yard once again, and was in shape for the next day's racing when she carried off first honors in one class. Such spirit is seldom seen as that shown by the owner of Marjorie after his repeated trials of hard luck. U U IV, apparently the fastest boat entered, judging from the only two rounds of the course she made, was also doomed, for after covering about 12 of the 20 miles in the 40-foot class she cracked off 2 of her 8 cylinders and came limping home with water spouting out of 2 of her exhaust pipes like a whale.

One thing that impressed the visitors from the United States as queer at first was the sight of the American yacht ensign flying from the bow staff or the fore-rigging of all the Canadian boats while the only place we are accustomed to seeing it is always aft. This was done as courtesy to the visiting yachtsmen and was only one of the many things done that very favorably impressed their guests. Some of the Canadian boats flew the red ensign from their after staff while others used the blue ensign with the crown and maple leaf thereon which is the ensign of the Royal Hamilton Yacht Club and requires a special warrant from the government for each boat flying it. The boats belonging to the Royal Canadian Yacht Club had a crown and a beaver upon their ensign.

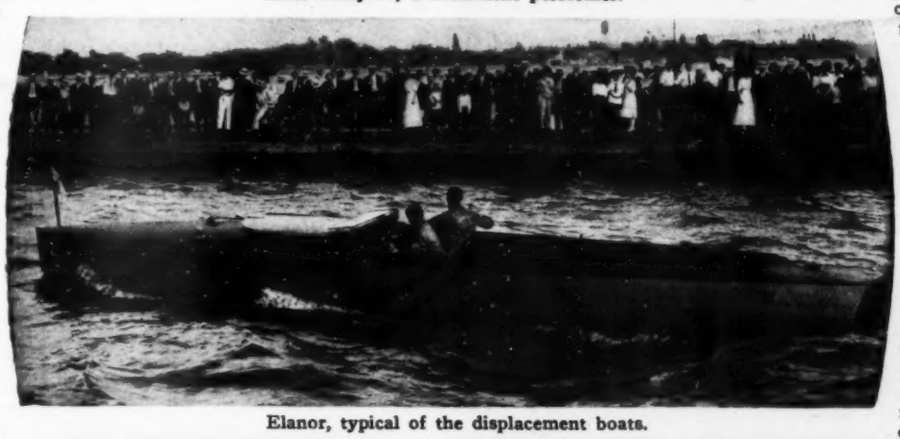
While none of the boats showed wonderful bursts of speed, 33.3 miles per hour being the best of any of the 5-mile laps and 32.8 the best average for the 20-mile course, yet consistant running was the rule. They raced and reeled off lap after lap with hardly a second's variation in many instances.

Heloise, owned by Mr. W. H. Gooderham, of Toronto, was perhaps the most consistant performer, being credited with six first prizes. Wind and sea made no difference with her. She is a 5-step hydroplane, 26 ft. long, of the Fauber type, built by Saunders of England. The hull is planked with 3 thicknesses of veneer sewed together with copper wire. The power plant consists of an 8 cylinder 3¾ in. x 5½ in., 60 horse Wolesley engine of the V type. Her 8 exhaust pipes project upward through a can-



Nulli II, winner International handicap.

Alice Mary II, a consistent performer.



Elanor, typical of the displacement boats.

Heloise, many times a winner.

Loew Victor II, winner of three second prizes.

vas hood about amidships just aft of which the helmsman sits and steers with a horizontal wheel on the port side. One outboard brass rudder is hung on the transom with the tiller on deck and a 16 x 35 wheel is turned over 1,500 r.p.m. The clutch is controlled by foot pedals making her as easy to handle as the ordinary runabout. Her finish is the finest throughout and her appearance decidedly trim in every particular.

Loew Victor II and U U IV, both 26-footers, the former designed by Hecker and the latter by the Smith-Ryan Boat Company, were up-to-date hydroplanes and likewise very consistent performers.

Both had two outboard rudders and steered from amidship on the starboard side. The early accident to U U IV was unfortunate as it did not give a fair chance to determine her capabilities.

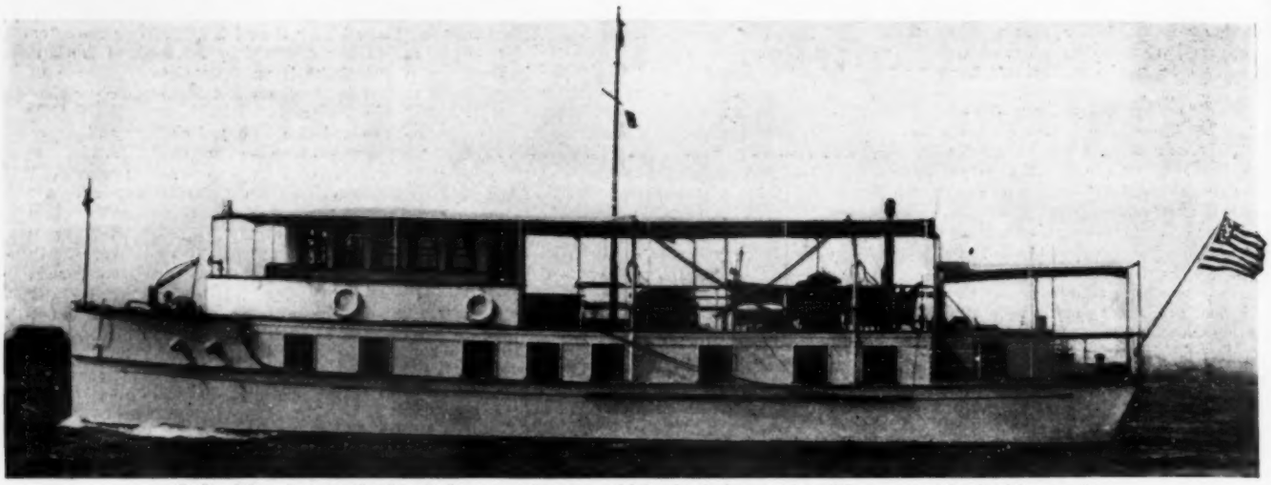
Of the displacement boats, Alice-Mary II, Eleanor, Gadfly III and Nulli II were of the semi-speed type and very able, comfortable boats. They were all designed by T. B. F. Benson, of Toronto, for use on Lake Ontario and had the engines placed under hoods well forward with large roomy cockpits full of comfortable wicker chairs. Although strictly displacement boats they listed well inward when rounding the marks and were all capable of around 20 miles per hour. Their performances by rounds varied little, in fact in the 4 laps of the 40-foot displacement class Alice-Mary's fastest and slowest times differed by only 15 seconds.

The Class Races were all scratch affairs without handicaps and the allowances in the handicap classes were all based on actual performances with cause for disqualification should their race time exceed the trials by more than a certain percentage. The actual performance system of handicapping was excellent in most cases and only two boats had to be disqualified and one of these through a defect in this method of determining the amount of time required for disqualification. This occured in the 10-mile handicap when the first two boats in were slow boats and each exceeded its allowance slightly but not enough to warrant disqualification. The third boat to finish, a fast hydroplane, exceeded her trial but by a smaller amount than the first two. As her trial time was less therefore, her excess time was a much larger percentage of the trial time and large enough to disqualify her. Here was a case where the fast boat could not possibly win the race for as it was, she was only third to finish, yet was disqualified for exceeding her allowance while the first and second boats were within their limit. This is a fault of the method that cannot be corrected when boats of a great difference in speed are watched together.

In the remainder of the handicap classes, the boats were sent away at times determined on the assumption that they could run a certain percentage faster than their trials and by this method such a case as preventing any particular boat from winning was impossible, provided of course that those finishing ahead of her were not disqualified.

The prizes consisted of silver cups, three in

(*Continued on page 66.*)



Judged by the standards of the new class to which she belongs, Lanai is a very trim looking craft.

The companionway looking aft.

The main saloon is 18 feet long.

Lanai, a Shallow-

The Mathis Built Twin Screw Craft

Curtiss James

THE twin screw, shallow-draft houseboat Lanai, shown in the photographs, was designed and built by the Mathis Yacht Building Company, of Camden, N. J. She is owned by Mr. Arthur Curtiss James, ex-commodore of the New York Yacht Club, to whom she was sold through Messrs. Tams, Lemoine and Crane.

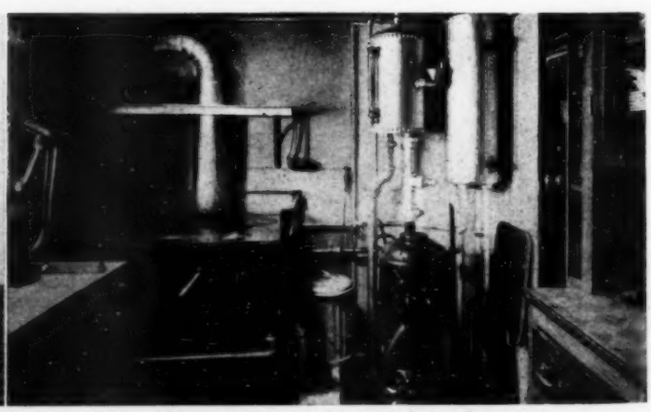
Lanai is of the typical Mathis type, especially designed for Southern waters, but also suitable for summer cruising along the Atlantic seaboard, and her beam and height are held within the dimensions limited for the Erie Canal. The dimensions are: length overall, 70 ft.; beam over planking, 16 ft. 8 in.; draft, 27 in.

She is one of a class that is rapidly and deservedly increasing in popularity, that is, the house boat that is comfortable and roomy enough to live aboard for long periods but still has enough of the cruiser about her to make long runs along the coast a pleasant variation rather than a somewhat daring venture. In shorter language, Lanai is a boat and not a floating residence and the views of her interior fittings show how well her designers have preserved the comfortable simplicity of the traditional deep-water craft and yet just missed the impression of bareness which is often attendant on a strict adherence to nautical standards. The location of the deckhouse forward gives the helmsman an unobstructed view and also affords a clear, unbroken sweep of deck space, besides helping to give the craft the appearance of a cruiser rather than a boat for harbor, lake and river work only.

The hull is constructed in a substantial manner throughout; special attention has been given to the longitudinal members in order to give her the necessary strength required by a shallow-draft boat of her dimensions and weight. To obtain the shallow draft without letting the propellers extend below the keel line, her stern has been tunnelled, giving proper protection for the wheels.

The interior finish of the boat is white enamel with solid mahogany furniture. The dining-room is panelled with mahogany below and flat ivory enamel above the window-sill line. The owner's quarters below deck are reached through the open stairway leading from the deckhouse to

Lanai does better than 10 miles an hour.



The hot water heating plant in the galley.

The boat is handled from the deckhouse, which is placed well forward.

Draft House Boat

Owned by Ex-Commodore Arthur of the N. Y. Y. C

the main saloon forward. This room is used as dining and living-room and is eighteen feet long and extends the full width of the boat. It is fitted with extension sofa seats, buffet, writing desk, bookcase, etc. Aft of the dining-room on the port side are two staterooms and a bathroom; on the starboard side one stateroom and the galley, while a central passage runs the full length between saloon and engine-room. All the staterooms are fitted with lower fixed and upper Pullman berths, bureau, full length wardrobe and lavatory. The owner's quarters are heated by a hot water system, the heater being located in the galley. All lavatories in the owner's quarters are fitted with running water.

The power plant consists of two 25 H. P. Craig motors, giving her a cruising speed of 10½ miles per hour. There is also a complete electric plant with generating set, storage battery and switchboard. The gasoline tanks have a capacity of 350 gallons and 700 gallons of fresh water can be carried.

The equipment throughout is most complete in every respect and nothing has been spared to make her as complete as any cruiser afloat. The boat is equipped with a 16-foot power tender and a 12-foot dinghy.

The photographs show better than any description the roominess both on deck and in the quarters below and also the perfect conditions of light and air obtained by using square windows instead of circular ports.

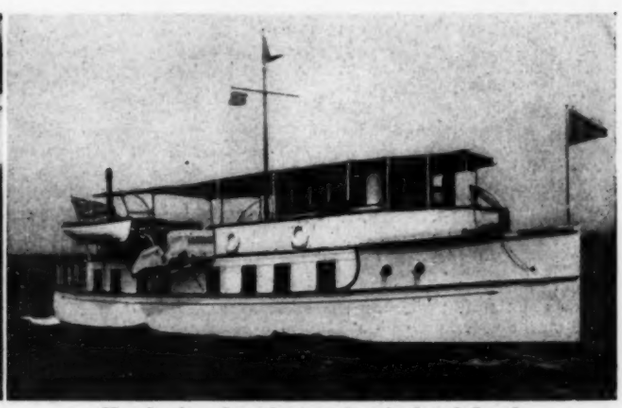
Last spring Lanai made the trip to Florida, starting down the Delaware River in January, under conditions that would make anybody hesitate to start even with a deep-draft sea-going cruiser. The river was at that time filled with ice from 10 to 15 inches thick all the way from Camden to Delaware Breakwater, and as it was impossible to run her propellers in the ice-filled river, she was put in tow of a sea-going tugboat. From the Breakwater she had to make the trip outside to Norfolk as the Chesapeake Canal was closed to navigation, being frozen up solid.

After spending the spring months in Florida waters Lanai has been used this summer for cruising around Long Island Sound.

The main deck space is amidships.

The staterooms have an agreeable boaty simplicity.

The two 25 h.p. Craig motors.



Her freeboard at the bow is raised and flared.

America's First Diesel Yacht.

The 84-footer Idealia Equipped with a 150 h. p. Nlseco-Diesel Engine.

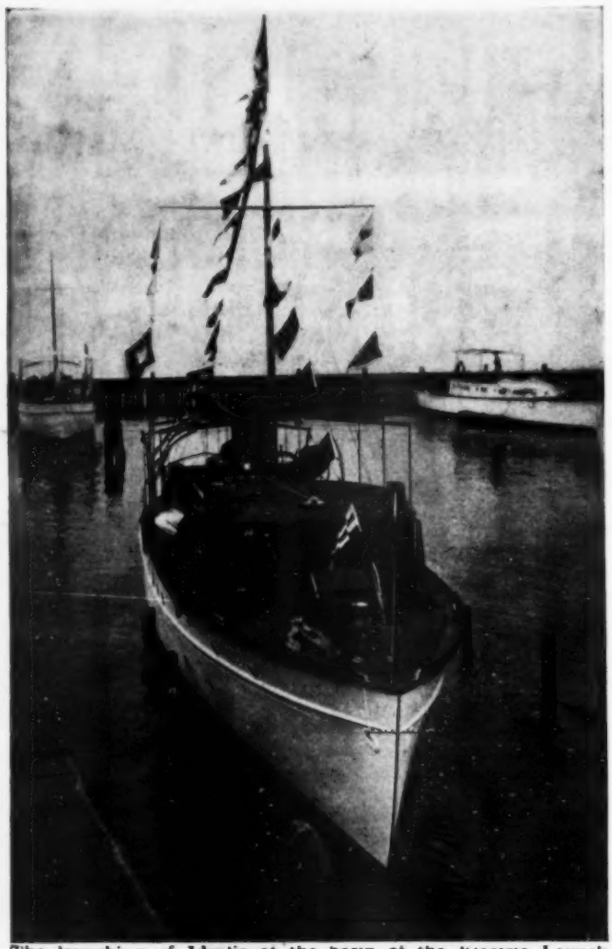
THE 84-foot Elco motor yacht, Idealia, designed and built by the Electric Launch Company, Bayonne, New Jersey, was launched recently.

Idealia was built for a New York yachtsman and is the first motor yacht in America to be equipped with the Diesel heavy oil marine engine. The unique power plant of this yacht is most interesting to yachtsmen throughout the world, as the rapid advance made in recent years in the development of the Diesel heavy oil engine for marine propulsion has led many to believe that eventually it would prove ideal for use in pleasure yachts, on account of the low cost of operation and absolute safety, the fuel oil being non-inflammable, non-explosive, and costing one-tenth that of the gasoline, the fuel most generally used in motor yachts of this size.

Idealia is 84 feet over all by 14-foot beam and 4-foot draft. With this liberal beam, comfortable cabin accommodations are provided in the owner's quarters, there being two double staterooms with lounging room and bath adjoining.

Eight or ten can be accommodated in the large dining saloon on deck, forward, with a view of the surrounding waters while seated at the table, a feature that is highly appreciated on boats of this type. A handsome mahogany buffet is built into the dining saloon, with lockers, dish-racks and drawers for storing table linen, glass, silver and china ware. The interior and exterior finish of the dining saloon is in selected mahogany.

The galley, which is exceptionally well equipped, having coal range, hot-water boiler, large porcelain sink, cupboard and lockers and ice-box having capacity for 400 lbs. of ice, is located below the decks adjacent to the dining saloon, which makes it convenient and easy of access.



The launching of Idealia at the basin of the Electric Launch Company, Bayonne, N. J.

The 150 h.p. 6-cylinder Nlseco-Diesel oil engine was designed and built by the New London Ship & Engine Company, of Groton, Conn. This engine will be remembered by many as the one on exhibition at the New York Motor Boat Show held last February in Madison Square Garden. It is of the Diesel type, operating on the two-cycle principal, with six working cylinders and one two-stage compressing cylinder. It starts with compressed air and is reversible. No electric ignition is used at all, the compression being sufficient in itself to ignite the charge at the proper moment.

Idealia has a capacity of 450 gallons of fuel oil, the engine consuming at full power seven gallons an hour; at a cost of 3¢ a gallon. The fuel expense per hour is 21¢. As the yacht is capable of a speed of 12 knots, on one filling of the tanks, 750 miles can be covered at a total expense of $13.50.

An electric light plant is installed in the engine room with a fuel oil engine direct connected to a dynamo, with air, water and bilge pump on one base, making a most complete plant. A large electric storage battery is installed, serving as an auxiliary to the electric plant.

A powerful electric searchlight is located on the bridge, and the anchors are raised by an Elco electric capstan on the forward deck, a most useful and convenient piece of apparatus; control being placed on deck, enabling one man to operate the capstan which will handle the heaviest anchor.

The owner's quarters and large stateroom are located aft, being accessible from the deck on the starboard side through a companionway leading to a lobby between them. The crew's quarters are in the extreme bow of the boat with accommodations for four men.

Colonial Club's Poughkeepsie Race.

A Closely Contested 131 Mile Contest in Which Nineteen Cabin Cruisers Participated in Two Classes.

By L. Kromholz.

THE Colonial Yacht Club's 131 Statute Mile run from New York City to Poughkeepsie and return in two laps, starting at 9 a.m. on July 27, 1912, met with such an enthusiastic welcome that the race will undoubtedly take place next season under the same conditions. It was a race that was extremely popular with the ladies, many of whom sailed and enjoyed the sport immensely. It was, perhaps, the most closely contested actual time race between four boats that was ever run over that distance.

Mr. C. R. Butler's Spindrift, the winner shown elsewhere in this issue, is an excellent, seaworthy cruiser built eight or nine years ago for hard service and not to beat the rules. She is about 41 feet 3 inches over all and the same on the waterline, with a beam of 9 feet and a draft of 4 feet 2 inches. Her power plant is a 4-cylinder 5 x 7, 30 h.p. Ralaco motor, but with the large Hyde wheel cannot turn up its rated revolutions. Spindrift, with her rating of 42.3, is not altogether unbeatable. Of eight races this season she won five firsts, two seconds, one third and two fast-time prizes. Twenty-seven races in the last three years or so and only once worse than third position.

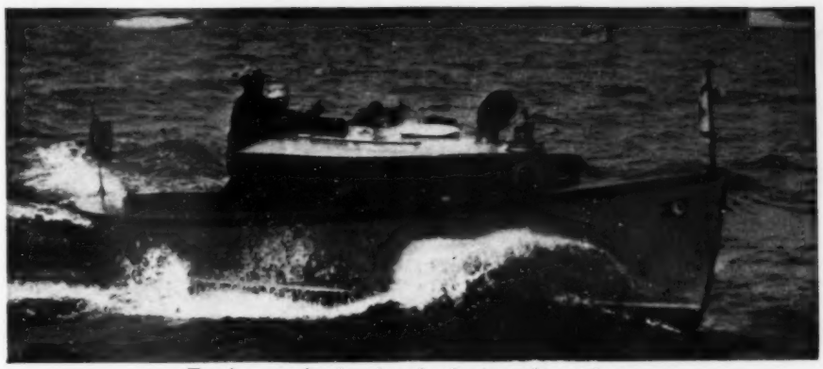
The start was an unusually good one with the exception of Respite who, after her tiller ropes fouled, hit the Spindrift amidships on the starboard side. Respite sustained a badly shattered stem but continued on in the race. The deck on the Spindrift was buckled and her side scraped.

About half an hour after the start M. Lindermann's Snap Shot III led, with Idle Time, a new 40-footer, owned by W. R. Behrman, of the Colonial Yacht Club, next on port quarter. Lottie G, the new Sterling-engined double cabin boat of W. Goetz, of the Home Yacht Club, kept to starboard as did the Spindrift who held fourth position, flying the vice-commodore's flag of the Albany Yacht Club. Of the following boats, Lady Betty was first about three-fourths of a mile astern, with Madeline II close to the Jersey shore and Respite directly astern. Yo Ho followed about one-fourth of a mile astern H. J. Russell's Lady Betty.

At 9:50 Snap Shot III steered sharply to starboard and lost the Idle Time, who had been sailing in the wake of the leading boat. Idle Time then tried to beat the tide on the Jersey shore and fell back to fourth position. Spindrift pulled up a boat-length closer to Snap Shot III. Yonkers was passed a few minutes later with Lottie G leading by a small margin. Idle Time abeam of Spindrift at 10:45, about 4½ miles below Rockland Light.

The finish at the Poughkeepsie Yacht Club was particularly interesting. The timers agreed that the Idle Time led the Snap Shot by three inches. Lottie G crossed first at 3:47:50. Spindrift finished 20 seconds after 4 p.m. and anchored south of the club, where the bottom

of the river is very far from the top—45 feet of water by the lead line, 40 feet from shore. Madeline, the scratch boat, finished at 4:40:45, with Yo Ho sixth, at 4:47:25. Respite, owned by Dr. V. C. Pedersen, came along at 4:48:17 in seventh position; 5:24:38 brought the Marion II, and the ninth and last boat at 6:17:43 was the Lady Betty.



Empire won in the class for boats under 35 feet.

The Regatta Committee divided the boats into four divisions, irrespective of class or rating, but according to their actual speeds, starting at 20-minute intervals in the reverse order of their arrival, to make the finish at New York City more interesting for the spectators who could not, however, pick the winner by this arrangement.

The first division started at 8:30 and included most of the under 35-foot class. Marion II started alone at 8:50, in the second division. Madeline II, Yo Ho, Respite and Lady Betty composed the third division. In the fourth division Spindrift followed the Idle Time over the line, with Lottie G a good third and Snap Shot last.

Idle Time gained two boat lengths up to the time of passing Danskammer Point. Snap Shot wiggled closer to the west shore and at 11:10 came back astern of Idle Time, making the string of four boats complete. Idle Time, who had been running in the wake of Spindrift since the start, lost five feet but soon settled on the wave.

At West Point, Snap Shot was 10 feet astern of Spindrift and in her sudden, short burst of speed gained five feet on the latter boat in 15 minutes. These positions were held with very little variation to Rockland Light and during this time the gentler sex on board the Idle Time showed their cleverness in catching the chocolates tossed from the Spindrift, so closely did the boats run during this part of the course.

Yo Ho was passed by Spindrift at 12:07 and Madeline 5 minutes later. Respite lost 2 minutes, owing to magneto trouble, one-fourth mile north of Black Spar No. 1 and was abeam at 12:20. Lady Betty close by at 12:57 and swung in astern of Idle Time. Yo Ho was also in line, with Marinette and a few others all about a boat length apart.

Empire, the scratch boat and winner of the under 35-foot class and last to start from Poughkeepsie, passed Spindrift at Verplank's Point about 1 p.m. She was running well and soon passed Lottie G. Marion II abeam at 1:40 and Rockland Light 10 minutes later. Snap shot left the line and passed the light on the port hand. Lottie G led Spindrift by 250 feet and Idle Time was still at the latter's stern. At 2:18 Tarrytown Light and Idle Time were abeam. A drop of 10 r.p.m. of Spindrift's engine gave Idle Time a chance to take third place which she held to the finish.

At New York City Lottie G. led the Snap Shot by 13 seconds. The time of Lottie G was taken as 3:51:20, Idle Time at 3:52:22, and Spindrift crossed the line at the Colonial Club at 3:53:30, a winner by 21 minutes and 30 seconds.

The Fall Regatta at Buffalo.

The Motor Boat Club at Buffalo Plans for its Big Annual Meet on the Niagara River.

WITH THE ENTRIES of practically every fast power boat in the East and Middle West already filed, the annual regatta of the Motor Boat Club of Buffalo bids fair to be the greatest race meet in the country this year. The speeders, many of them newcomers this season, will battle over the Niagara River course off Motor Island for three days, September 12, 13 and 14, for the handsome E. R. Thomas trophy, the Chamber of Commerce and Manufacturers' Club trophy and several other rich cups. These prizes will also include the International Interlake Championship of the Great Lakes and the Championship of the United States.

All motor boat enthusiasts are familiar with last season's regatta on the Niagara when the famous Dixie IV was wrecked on the breakwall. Many of last year's boats will again be seen in action while the owners of others have built new outfits under the old names. Dixie IV is not being raced this year, but P. D. Q. II, a Dixie Jr., owned by A. G. Miles, of New York, will endeavor to uphold the honor of the old name. She won the Gold Challenge Cup Race of the St. Lawrence this year.

W. J. Conners will enter his Courier III or a new and smaller hydroplane, while Harry T. Vars, owner of La Truda II, will race his new hydroplane, La Truda III. This is a 26-footer driven by an 8-cylinder engine of 150 h.p. Her first race will be the Buffalo meet.

J. Stuart Blackton, of the Atlantic Yacht Club, New York, will be on hand with both the Baby Reliance and the Baby Reliance III. The former is powered with an 8-cylinder 150 h.p. Sterling engine, while the other is driven by a pair of motors of like make.

J. J. Ryan, of Algonac, Mich., creator of the Reliance hulls, is expected to be on hand with one or more new fast ones.

John J. Hubbard, of Pittsburgh, owner of Intruder II and Gretchen II, will bring both his boats East. Gretchen II is last year's winner of the International Championship, and Mr. Hubbard is extremely anxious to retain the title.

Eph IV, the speedy Indianapolis boat, owned by C. G. Fisher, is expected to give a good account of herself. Mr. Fisher has informed Commodore Gunnell that he also intends to tackle the meet with a new boat.

Thelma IV, one of the most consistent winners on the lakes this season, has been entered by the Thelma Boat Works of Detroit.

Fleet Captain Harold Kelly, in charge of the races, declares that from the assurances received from the various power boat owners, at least 20 speeders will be on hand for the meet, making the greatest collection of high-speed boats ever assembled at any meet. All boats owned outside of Buffalo will be loaded and unloaded free and accommodations provided for boat, owner and crew.

The "bunk house" where the visiting crews will be entertained.

The judges stand and a part of the grounds of the Motor Boat Club of Buffalo on Motor Island.

The events will consist of mile trials for the 20, 26, 32 and 40-foot classes; 30-mile race for 32-foot boats or under; 30-mile, free-for-all Championship of the United States; 35-mile open race for the International Interlake Championship, and the $2,500 Edwin Ross Thomas Trophy.

The regatta committee is composed of: General chairman, Charles A. Criqui; fleet captain, Harold Kelly; judge, H. A. Brundige; fleet surgeon, Dr. James P. Wilson; race committee, Herbert I. Sackett; clerks, George B. Wood, Jr., George I. Peugot and George E. Morgan, Jr.; gunners, B. A. Fryer and John Willett.

The Scripps Reliability Cruise.

The Second Annual Running of this Novel Eight Day Contest Patterned After Those That Have Helped to Develop the Automobile.

By C. B. McCuaig.

ALTHOUGH hardly a success, if judged by the number of entries, the 1912 Scripps Reliability Cruise which ended at Hamilton, Ont., on July 7th, did its bit to impress upon the public the truth of motor boat efficiency.

Two cruisers started from Detroit on July 30. Two checked in at the Royal Hamilton Yacht Club eight days later with perfect scores. In other words, they covered the whole course of 670 miles without needing the least bit of tinkering of any kind, and the closest examination failed to disclose the slightest fault in either boat.

The fact that only two cruisers showed up at the starting line was a sad disappointment to those who arranged the cruise. Two weeks before the day for starting it was practically certain that there would be at least 12 entries, but Fate stepped in at the last moment and spoiled it all.

Most of the promised entries were from Detroit and nearby ports and the promoters of the cruise did not take into account the fact that just one week before the date set for the cruise was to be held about the biggest week of celebrating that Detroit has ever known. Everybody laid off for Cadillaqua, and everybody was on the go day and night. The result was that when the morning for the start of the Scripps Cruise dawned the men who had been planning to take part in it found themselves brain-fagged and weary, with stacks of correspondence looming up on their desks like mountains. So they began with one accord to make excuses.

Of all the boat owners who had intimated their intentions of going on the cruise only two made good, Com. W. E. Scripps and F. W. Sinks, both of the Detroit Motor Boat Club. Both own boats which will go anywhere—the kind you just get underway and then forget about—and for this reason the 1912 cruise was rather a tame affair.

Com. Scripps' motor yacht, Narmada, is much the larger and faster of the two boats. Last year she was entered as a non-contestant and she did not make much of a showing because of engine trouble, but nothing like that happened this year. In the first cruise Narmada was powered with a single engine of high horsepower, but shortly before the start of the last cruise this was replaced by two Scripps engines, 7½-inch bore and 9-inch stroke, and they ran splendidly all the way, despite the fact that their installation was hardly completed when the cruise began.

Inamic carried the same power plant with which she won highest honors in the 1911 Scripps Cruise, a 15 h.p. "Buffalo" medium speed engine, and her claim to distinction lies in the fact that she repeated her triumph of last year, coming through with perfect score both times, and establishing a reputation for reliability which it will be hard for future contestants to equal.

The sun was shining when the boats got under way off the Detroit Motor Boat Club on the morning of July 30th and the cruise to the Maumee River Yacht Club was uneventful save for a thunderstorm which came up just as the boats were approaching Toledo.

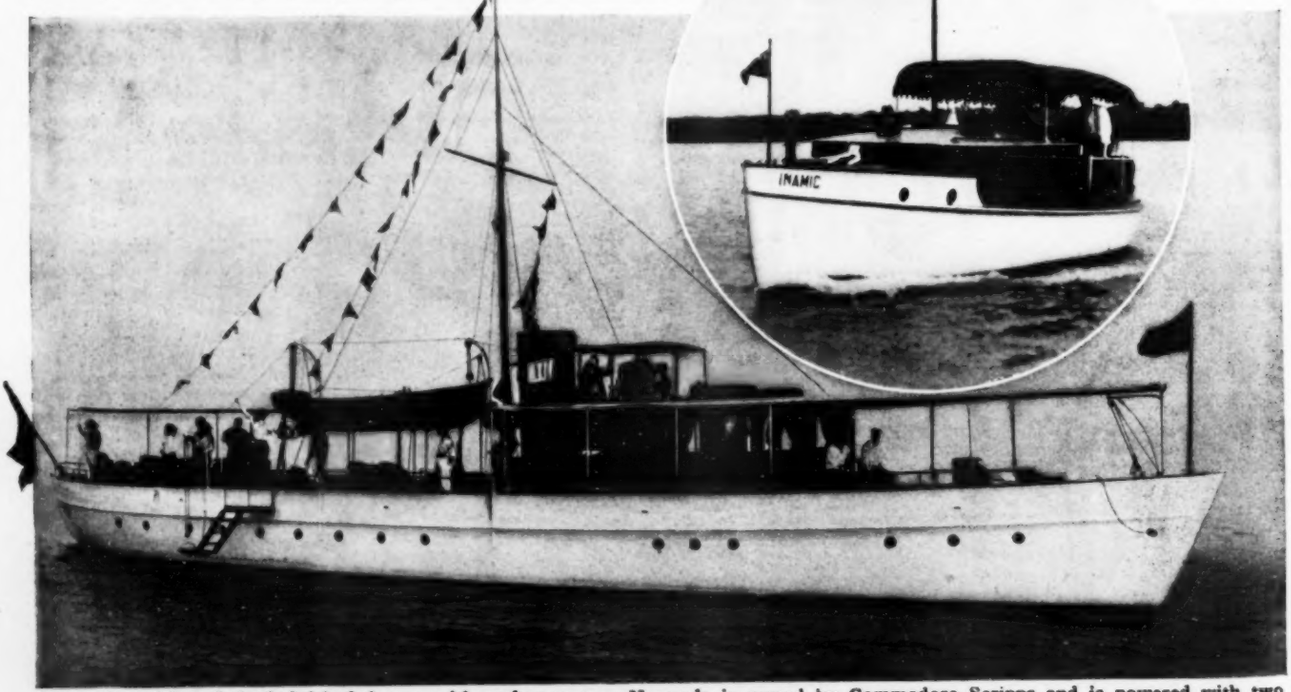
The next day's run brought the boats to Rocky River where they anchored for the night. It was the worst day of the cruise, as far as sea was concerned, but the only one who confessed to being seasick was Rex, the collie, who was mascot on Narmada, and he was well cared for by the ship's surgeon.

The run from Cleveland to Erie was made under a bright sky, and with the sea like glass. On landing the members of the cruise party were met by a delegation from the Erie Yacht Club, headed by Commodore Bliss, and informed that the town belonged to them. After a hasty glimpse at the city which made Perry's victory famous they embarked in launches for a houseboat up at the Head where lunch was served. In passing it is only right to remark that the Erie Yacht Club knows a few things about hospitality, and you can put that down in your log.

Buffalo was the next stop on the route, and there the voyagers found a score of commodores, past commodores and other grandees, waiting to welcome them with open arms. The arrangements had been made along the lines of a stag party, and therefore the entertainment committee was somewhat disconcerted when it was learned that one member of Com. Scripps' party had been seized with a mad desire to dance, but Fleet Capt. Harry Elliott met the emergency, and by diligent use of the telephone he managed to round up enough ladies to keep the light-footed sailor man busy until midnight

The next day was the most taxing of the whole week. The boats left early and soon reached Port Colbourne, Ont., at the south end of the Welland Canal. As the other end of the canal was approached it was learned that a big freighter had rammed her nose into one of the locks and that the canal had been closed for several hours, consequently there was a big jam, and the Narmada and Inamic had to be locked through with three other boats, but they managed it without mishap. It was after 1 o'clock Sunday morning when the boats reached Port Dalhousie at the north end of the canal, very much to the disappointment of Dr. W. Murray Muir, of Com. Scripps' party, whose ancestral home is in the pretty little seafaring town, and he had made extensive arrangements for the entertainment of the voyagers, but instead of staying over night at Port Dalhousie, as was the original plan, the boats pushed on to Charlotte.

From Charlotte the boats got under way bound for Toronto and when Hamilton was reached on Wednesday every one was in good humor and ready to start all over again.



Narmada and Inamic both finished the run with perfect scores. Narmada is owned by Commodore Scripps and is powered with two Scripps motors. Inamic is powered with a 15-h.p. Buffalo and won the highest honors in last year's cruise.

From Motor Boating Readers

A Department for the Exchange of Ideas and the Discussion of Questions of General Interest. Editorial Opinion on a Number of Questions Submitted by Readers of the Magazine.

MoToR BoatinG's columns are open to its readers, not only for asking questions, but for placing before other readers ideas, results of experience, opinions, etc., that should be interesting or helpful to them; but the editor will not, of course, be responsible for any opinions expressed of statements made in such communications. The name and address of the writer must necessarily be given in every case to make an answer by mail possible (no anonymous contributions will be considered for publication), but names will be omitted in publishing the letters and answers where desired, in which case it is desirable that initials or other distinguishing signature be appended. Through the correspondence department readers of the magazine may be of direct aid to one another in solving the problems of motor boating.

Wiring Schemes.

To the Editor of MoToR BoatinG, *Sir:*—

Would you kindly advise me as to the order of wiring for the following: Six dry cells, magneto, double switch at engine and single switch at bow, whether running on batteries or magneto. A. M. D., Hartford, Conn.

[You do not state whether your ignition system was high or low tension, that is jump-spark or make-and-break. We show three diagrams of possible wiring connections to accomplish your desired result, worked out on the assumption that you use the make-and-break system. However, should yours be the jump-spark, wiring will be exactly the same as shown with the additional secondary wiring, which will be no different from the usual method.

Plan 1 is the one ordinarily used and will give good results.

Plan 2 is a much more convenient one. By the use of two three-way switches, as shown, the engine can be stopped by turning either switch and to start again simply turn the one that is handiest, not necessarily the switch turned to stop the engine.

In plan 3 the primary current is not carried through the wiring to the bow switch while the engine is running, thus reducing the ohmic resistance of the circuit and making it possible to run with less voltage; that is, batteries run down to a considerable greater degree can be used with this wiring plan that could not with the other two. Of course, you understand that the operation is reversed at the bow switch with plan 3; that is, when your engine is running the bow switch is open and to stop you close the switch which short-circuits the primary of the coil, making a non-inductive circuit which consequently prevents a spark at the engine. A convenient substitute for a switch at the bow with this method is an ordinary push-button which should be pressed when it is desired to stop the engine. This is also an advantage when it is desired to reverse the engine on the spark.]

Tonnage and Displacement.

To the Editor of MoToR BoatinG, *Sir:*—

Will you kindly inform me of the rule to compute the tonnage of boats?

H. A. L., Brooklyn, N. Y.

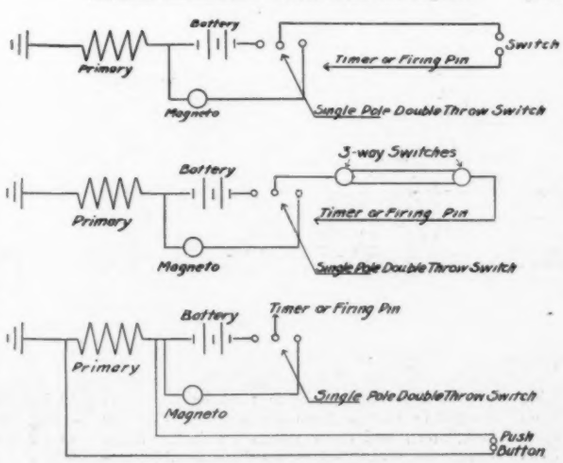
[We are not quite sure whether it is the tonnage or the displacement of the boat that you desire. These two terms have a far different meaning and cannot be used interchangeably. The tonnage or registered tonnage, as it is sometimes called, also net tonnage, is a measure of the internal capacity of a vessel where 100 cubic feet is arbitrarily assumed to equal one registered ton. This value is computed from the following formula:

$$\text{tonnage equals } \frac{L \times B \times D \times .75}{100},$$

Sea Wolf does 10.3 miles an hour with a 12-15 h.p. Sterling motor.

where L is the deep load waterline length; B is the breadth or beam over the widest frame at its widest part; and D the depth of the vessel measured from the top of the floor-plate to the upper side of the upper deck beam. The displacement of a vessel is the weight of the volume of water which it displaces. For sea water it is equal to the volume of a vessel beneath the waterline in cubic feet divided by 35, which is the figure for the number of cubic feet of sea water in a ton of 2,240 lbs. For fresh water, the divisor is 35.93. The U. S. registered tonnage will equal the displacment when the entire internal cubic capacity bears to the displacement the ratio of 100 to 35.

You will see from the above that to determine the displacement of a boat, it will be necessary to know the shape and dimensions of her underbody; or in other words, to have the lines of the boat. From these the displacement may be computed by one of the several integrating rules or by the use of a planimeter or integrator. More detailed information for obtaining the displacement from the lines of a boat was given in the April, 1912, issue of MoToR BoatinG, pages 19 to 22. The displacement or gross tonnage, as it is sometimes called, may be approximately estimated as follows: Let L denote the length of the vessel in feet; B the beam in feet, and D the mean draft in feet, taken at a point about midway between the bow and stern. Then the volume of the underwater body equals approximately $.55 \times L \times B \times D$. The volume of displacement in cubic feet divided by 35 gives the displacement in tons.]



Three wiring diagrams suggested as an answer to A. M. D.'s inquiry.

A Fast Cruiser with Small Power.

To the Editor of MoToR BoatinG, *Sir:*—

I am enclosing a print of my new raised deck whale boat cruiser. I think it rather remarkable as she is 35 ft. by 8 ft. heavy construction, 1½ ton ballast besides 12-15 h.p. Sterling engine and does 10.3 miles per hour. She was built by the M. G. Casey Co., New Bedford, Mass.

L. M., New York City.

Wheel for a 22-Foot V-Bottom.

To the Editor of MoToR BoatinG, *Sir:*—

I am building a boat from the plans published of a 22 ft. V-bottom in MoTor BoatinG for March, 1911, and would like to know what size and pitch propeller will give the best results. I have a 12 h.p. horizontal opposed two-cylinder 4-cycle engine which runs from 600-800 r.p.m. and is this a good engine for this style of boat? What speed should I get?

G. A. M., Scotia, N. Y.

[We believe the best wheel for the 22 ft. V-bottom boat described in the March issue of MoToR BoatinG with the engine you describe in your letter, will be one of 16 inches diameter by 20 inches pitch, having three elliptical blades. This should give you a speed of about 12 miles per hour. If your engine is in good shape, we believe that a 12 h.p. horizontally opposed two-cylinder four-cycle engine which runs between 600 and 800 r.p.m. would be a good engine for this style of boat.]

Fastest Speed Ever Made.

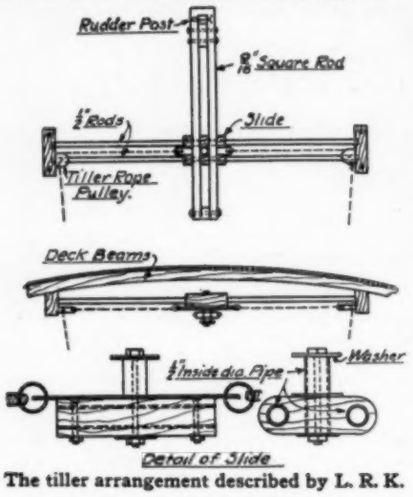
To the Editor of MoToR BoatinG, *Sir:*—

Will you kindly advise me the fastest speed ever made by a motor boat, and also the fastest speed ever made by any boat and the place at which it was made?

L. L. D., Fitzgerald, Ga.

[Baby Reliance III, owned by J. S. Blackton, covered a mile at Davenport, Ia., which had been carefully surveyed by government officials in 1 minute and 7 seconds, which is equivalent to about 53.7 statute miles per hour. It is reported she was timed over the course by the officials of the Mississippi Valley Power Boat Association Regatta, held at Davenport on July 4th, 5th and 6th last. If this be the case, we believe the record will have to be accepted as official.

Previous to this performance of Baby Reliance III, the fastest mile made by any motor boat on an official trial, we believe, was made by Dixie IV last September at Huntington, when she covered a mile at the rate of 45.22 statute miles per hour.]



The tiller arrangement described by L. R. K.

Excellent Tiller for Open Boat.

To the Editor of MoToR BoatinG, *Sir:*—

The following illustrated method for the arrangement of tiller is being applied to an open launch in which the tiller is under the deck. The difficulty with the common bar type of tiller was overcome by this method, that is, the alternate tight and slack tiller rope in the usual method as the wheel was moved from side to side will now always be of the same tension. Of course the quadrant will do the same thing, but the material for making the various parts was at hand and a quadrant was thought an unnecessary expense.

The tiller is made from 9/16 inch square bar iron bent around the rudder post like a hairpin, a filler piece is riveted at this end, and leaves a square hole for the upper end of the rudder post. A ⅛ inch copper pin prevents its coming off. At the outer end, the two bars are riveted together with a sufficient filler piece between to keep the bars parallel. This makes a slot in which the vertical post in the slide block works. A washer (or cotter pin could be used) is provided, and bolted through the slide block, keeping the tiller from coming off. Two ½-inch I. D. pipes are put parallel in the slide block which is of oak, and it is through these the two ½-inch rods are placed. These rods are slipped into holes in oak blocks at each end and the blocks are fastened to deck beams. To each of these blocks a pulley is fastened. The tiller rope is fastened to the slide and then run through these pulleys, and the rods acting as guides always keep the rope working along the same straight line so that there is no tendency for it to become tight or slack.

Care must be taken to make the slot in the tiller of sufficient length so that the rudder can turn its full quarter turn. In the outfit described the rods were placed 12 inches from the rudder post, and since it was under deck a cap was screwed down on the rudder pipe over a ¼ inch leather washer, both provided with holes sufficient to let rudder post through. This will keep out any water that would tend to work up.

L. R. K., Philadelphia, Pa.

Proper Flags for a Schooner Rig.

To the Editor of MoToR BoatinG, *Sir:*—

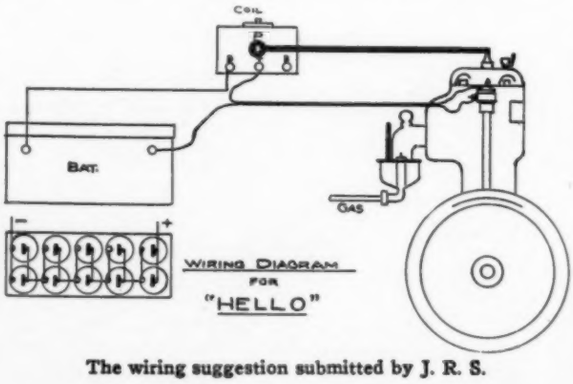
I contemplate making a cruise down the coast from St. Andrews Bay to Key West and Havana, Cuba, and I want to know what kind of flags of different kinds I can carry and where is the proper place to carry them. I do not belong to any yacht club. We want to carry as many different flags as is proper. The diagram shows the rig.

R. L. S., Cromanton, Fla.

[From your sketch we should judge that your boat is a schooner with yard arm on the fore mast and gaff on the main mast, and with bow and stern staffs. Of course, if we are not right in this assumption, the following information about the proper flags to fly may be in error, as the rig of the boat determines in many cases what flags should be flown.

The ensign should be flown at the taffrail staff when at anchor, on both steam and sail vessels. When under way, it should be flown from the after gaff end of sailing vessels and either the taffrail staff or gaff end of motor boats, as desired. The club signal (triangular in shape) should be flown from the fore top mast (swallow-tail shape) the private signal from the main top mast and the Union Jack from the bow staff on Sundays, holidays and on all occasions of ceremony, when at anchor only.

Between sunset and 8 a.m. the night pennant should be flown at the main top mast. The absent flag is flown from daylight to dark at the starboard main yard arm, or in the absence of the yard arm, on the starboard halyard about two-thirds of the distance from the deck to the masthead. When at anchor, the white rectangular meal flag should be flown from the starboard main spreader during meal hours of the captain, and the red triangular crew's meal flag from the port fore spreader, when at anchor. The rectangular officers' flags takes the place of private signals and are flown at the same position as the latter, except that they are flown during the night and day at all times, while the private signal is only flown from 8 a.m. to sundown. Your guest flag should be flown from the starboard main spreader and the church pennant when at anchor during Divine service should be flown at the taffrail staff, over the ensign. When dressing ship on holidays, during racing events and on other gay occasions, the flags of the International code may be used, arranged in strings from the mastheads to the bow, stern and other points on deck. Flags having names spelled out on them should never be flown and on no occasion should more than one flag be flown from the same hoist, except when dressing ship and the church pennant, as explained above.]



The wiring suggestion submitted by J. R. S.

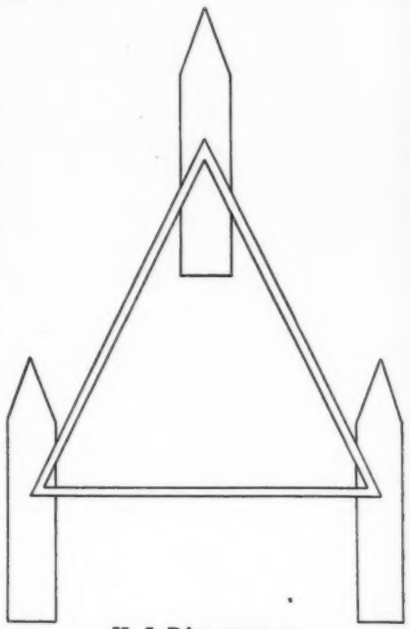
Compound-Series-Multiple Battery Connection.

To the Editor of MoToR BoatinG, *Sir:*—

As a constant reader of your magazine, I have found many useful hints. I am enclosing a wiring diagram for a single-cylinder engine which I have found very efficient. I set the batteries in a galvanized iron box and completely filled the remaining spaces with hot paraffin. They run the boat one whole season and will light it the next. The connection is called "Compound-Series-Multiple."

If you think this will be of sufficient interest to your readers, you are at liberty to use it.

J. R. S., Brooklyn, N. Y.



H. J. B.'s catamaran.

Size of Tanks to Support a Given Weight.

To the Editor of MoToR BoatinG, *Sir:*—

Will you be kind enough to inform me how large I will have to build three tanks (torpedo shape) to hold 500 lbs. upon water?

Am going to have tanks constructed and placed, as shown in diagram, so they will offer the least possible resistance while going through the water.

H. J. B., Rochester, N. Y.

[You will need to provide 1 cubic foot of tank capacity for about every 62 lbs. of weight they are to carry, including the weight of the tanks, tie rods, supports, etc. For example, if the total weight of material and cargo is 500 lbs., you will need 8 cubic feet of tank capacity. This is equivalent to a tank 12 inches in diameter and 10.2 feet in length; or three tanks of the same diameter each 3.4 feet long, providing the three tanks weigh about the same amount as one tank. The same result would be obtained by using three tanks 6 inches in diameter and each 13.6 feet long. Of course, this capacity will only just support the weight and if any freeboard is desired, larger tanks will be necessary, according to the proportion of the tanks that you desire to have out of water. Making the tanks of less diameter and greater length should decrease their resistance through the water up to a certain point.]

If the catamaran is to be used in salt water, owing to the difference in density of fresh and sea water, 1 cubic foot of tank capacity will support a weight of approximately about 64 pounds.

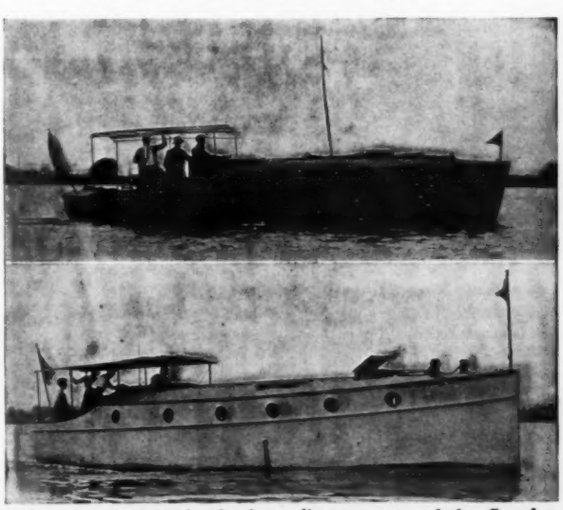
Among the Clubs

In the height of the season—the Atlantic City Motor Boat Club, Atlantic City, N. J., at regatta time.

First Annual Cruise of the H. R. Y. R. A.

On Saturday, August 3rd, the squadrons of the New York Motor Boat Club, Columbia, Yonkers and Tappan Zee Yacht Clubs started from the anchorage of the Tappan Zee organization at Grand View-on-Hudson on the first annual cruise of the Hudson River Yacht Racing Association. Lady Betty represented the Columbia Yacht Club; Royal Arc, Bathurst and Arlington, the New York Motor Boat Club; Thistle and Augusta, the Yonkers Yacht Club, and Possum, Bemaha, Grace, Topnotch, Helen, Lillian J. and Onoto, the Tappan Zee Yacht Club. President E. W. Marshall, on board the flagship Thistle, headed the flotilla. The start was made with a strong head wind blowing, which kicked up a nasty sea and made the going very unpleasant for the smaller craft. Off the home of the Shattemuc Yacht Club, the fleet was buffeted by the broad reach of Haverstraw Bay, but left Ossining promptly on time at 11 a.m., with the addition of Marie Louise, the flagship of the Shattemuc Club. When Stony Point was reached at noon, the fleet had become considerably separated by the blow, and from here to Newburgh little attempt was made to maintain squadron formation. The Thistle arrived at Newburgh at 2:35 p.m., and President Marshall ordered a stop of half an hour to give the fleet an opportunity to reassemble. At 3:05 the squadron got under way again, increased by the addition of Syrena, the flagship of Commodore Pratt of the Newburgh Yacht Club, Elanor, Consuelo, Alida, Waneta and the auxiliary sloop Dagon. From Newburgh to Poughkeepsie, the objective point of the cruise, squadron formation was observed and a 7-knot speed maintained. Off Milton the fleet was further augmented by Clara, the flagship of Commodore Frank of the Poughkeepsie Yacht Club, who is also vice-president of the Hudson River Yacht Racing Association; and Seabright, Voudy, Seabreeze and Triceann, also flying the burgee of the Poughkeepsie organization. At Poughkeepsie the captains and their guests to the number of about eighty-five were royally banqueted by Commodore and Mrs. Frank in the Pompeiian Room of the Morgan House, and nothing was left undone by host or hostess to make the occasion the most enjoyable in the history of Hudson River yachting. Commodore Frank acted as toastmaster, and reminiscences were heard from President Marshall, ex-commodore of the Yonkers Yacht Club; Ex-President H. M. Carpenter, commodore of the Shattemuc Yacht and Canoe Club; Worthington Scott, rear-commodore of the Tappan Zee Yacht Club; H. G. Pratt, commodore of the Newburgh Yacht Club; Capt. Chas. Ulrichs of Tappan Zee; Capt. Moran of the Columbia organization, and Capt. Collver of the Newburgh Yacht Club. Commodore Frank is one of the oldest and most popular yachtsmen on the Hudson River, and has been in the motor boat game practically since its birth. His present boat, the Clara, the fourth of her series, is a beautiful 60-footer designed by Whittelsey & Whittelsey and built by Buckout in 1911. Her power is a 6-cylinder Standard engine. Judging from the success of the cruise, there is little reason to doubt that it will in the future be one of the prominent annual features of the Hudson River Yacht Racing Association. Everyone who made the trip had a tremendously good time and there was a general feeling that the opportunity offered by the cruise for each individual to broaden his acquaintance in the motor boating fraternity had not been neglected.

The Camden Motor Boat Club, Camden, N. J., conducted a 190-mile race to Fourteen-Fathom Bank light ship and return on July 19th and 20th. Although the club had 10 entries for this event, 5 were withdrawn before the date of the race. The race was won by Chelwood, owned by Rufus K. Lennig, of the Yachtsmen's Club of Philadelphia, with Eugenia II, owned by Dr. Eugene Swayne, taking second place. Haji went aground on the rocks off National Park at midnight, and although Commodore Dudley brought her back under her own power practically undamaged, the wait of an hour and a half for the tide to turn settled her chances as far as the race was concerned. Casino collided with a log after turning the lightship, damaging her propeller and opening several seams and was forced to withdraw. Pickaninny did not start at all so that Chelwood and Eugenia II were the only boats to cross the finishing line. The former started at 9:30 p.m. on July 19th and finished at 3:27 p.m. on July 20th, having a time allowance of 3 hours, 12 minutes and 14 seconds. Dr. Swayne's boat got away at 9:45:55 p.m. and finished at 4:28 p.m., her time allowance being 2 hrs., 56 min. and 9 sec.



The two principals in the long distance race of the Camden Motor Boat Club, July 19th and 20th. The lower picture shows R. K. Lennig's Chelwood, the winner, while the upper boat is Eugenia II, owned by Dr. Eugene Swayne, which took second place.

Around Long Island.

In the New Rochelle Yacht Club's race around Long Island, a distance of 245 nautical miles, which started at 2.00 p.m., July 20th, Spindrift, owned by C. R. Butler of the Albany Yacht Club, was the only boat to finish. The log of the Spindrift, which follows, was furnished by L. Kromholz, who was one of the party on board. The other contestants were Half Moon, owned by G. W. Van Benschoten, and Respite, owned by V. C. Pedersen.

Weather, clear with light variable winds. Start off Premium Point. Spindrift got away three seconds after the gun, followed by Respite five seconds later, with Half Moon astern of Respite. Spindrift's engine turning 480 r.p.m. Half Moon passed Respite at 2.11. Stepping Stone light abeam at 2.35. Throg's Neck light abeam at 2.46. Half Moon two minutes astern at Throg's Neck, and Respite passed the Neck three minutes later. Passed North Brother Island at 3.18, Hell Gate at 3.30, Brooklyn Bridge at 4.04. Battery abeam at 4.07, and Fort Hamilton at 4.45. Sailed through Buttermilk Channel and Ambrose Channel. Turned buoy No. 6 A. C. at 5.35 and changed course to E ⅛ S. Half Moon and Respite sighted at 6.10 p.m. off Rockaway, about two miles astern. The former stopped twice in Hell Gate owing to mud in the cylinders. Fire Island light sighted at 7.21. Two miles east of the light, altered course to due east. At 11.25 Shinnecock light off port bow. Ran into light rain shower. (Sunday, July 21st) Shinnecock light abeam at 1.47. Dawn at 3.30. Gray, misty morning. Course ENE ¼ E. Abeam Montauk light 6.10 a.m. Arrived at New Harbor (breakwater), Block Island, at 7.54. Tied up at dock. Half Moon arrived at 8.45, and Respite at 10.05. Dr. Pedersen of the latter craft reported a trying trip. To prevent being rolled over by the heavy ground swell, the navigator had to tack the Respite a few miles out to sea and back again. Respite withdrew from the race and beached to repack a leaky stuffing box. The boats were supposed to start for New Rochelle by 12.00 noon, the total time between entering and leaving the harbor to be deducted from the total elapsed time of each boat. Left Block Island dock at 11.38, stopping at light keeper's house to get official time of boats. Cleared from Block Island light at 12.00 noon. Half Moon did not appear at the starting line.

Wind, south. Tide, last of flood. At 1 p.m. ran into rain squall. Heavy beam sea. Course W by N for little Gull island. Race Rock light and Little Gull island abeam at 2.40. Raining hard and heavy, choppy sea. Passed Gut at about 3.30 and headed for Rocky Point. Ran into heavy rain storm which lasted about an hour and a half. Abeam Horton's Point at 5.00, and course set for Oldfield Point light. Had the light abeam at 9.30 Course now W½N for Eaton's Point. Valves stuck and engine behaving badly. Abeam Matinicock Point at 12.45 a.m. Course now for

Two winners in the regatta of the Atlantic City Motor Boat Club. On the left, Chelsea Special which defeated Teck, Jr., in the speed boat race and on the right, A. B. Endicott's Skibo, the winner in the large cruiser class.

Execution Rocks light. Sands Point light and Execution light in range at 2.00. Crossed finish line at 2.11 a.m., Monday.

The Atlantic City Motor Boat Club, Atlantic City, N. J., held an exciting motor boat regatta on July 19th and 20th, which was witnessed by a large throng of spectators. Chelsea Special won the speed-boat contest from Teck, Jr., the new DuPont boat, and Caroline II, covering the 12 nautical miles of the course in 27.00. Caroline II had 10.50 minutes, and Chelsea Special 3.27 minutes time allowance from Teck, Jr. Caroline II was the first to cross the starting line, but she had only gone a little distance when engine trouble developed and put her out of the running. Chelsea Special was sent away at 5:07:27 o'clock, and was followed by the DuPont boat at 5:10:53. On the first round the DuPont boat gained 42 seconds on her rival and looked like a probable winner, but as she crossed the line on the second lap she was seen to be in trouble, and from the time she made the turn around the buoy she was out of the race. The Chelsea Special made the three successive laps of four nautical miles each in 10.08, 9.35 and 9.22, while Teck, Jr., covered the first lap in 8.20 and the second in 9.01 before engine trouble forced her out. In the displacement speed boat class, Intrepid II, owned by Warren Somers, won from Dr. Westney's Brittain. The semi-speed boat division went to Geo. F. Joly's Venice, with Antone, owned by E. L. Richards, second, and D. R. Barrett's Dispatch, third. There was only one starter in the open boat class, Toy Yot of Ocean City, owned by E. E. Leedom, which made the 8 miles in 37.55. Zaraya, owned by Fred Cuskaden, captured the small cruiser class, with Clarence Sill's Talisman a close second and San Jose, owned by Frank Chambers, third. There were only two entries in the large cruiser class, the Skibo, owned by A. B. Endicott, and Geo. F. Fish's new boat, Luegeo II. The event went to Skibo, Luegeo II, losing 20 minutes making engine repairs after she had passed the two-mile stake. Notwithstanding the delay she finished the race. The regatta was one of those on the schedule of the South Jersey Yacht Racing Association.

The Clinton Boat Club, Clinton, Ia., held a 10-mile race for the Perpetual Challenge Club Cup as the concluding feature of the Annual Water Carnival of the Y. M. C. A. on July 30th. The contest was run over the 5-mile club course, and while it proved a walk-away for W. B. Disbrow's W. D. which finished in 29:40, the rest of the contestants were more evenly matched and furnished plenty of excitement for the spectators. The second place went to Roamer in 51:30 and Lady Gray took third place with a time of 55:30. Ne'er do Well and Smile II finished in a dead heat in 1 hour and 12 minutes. The Perpetual Club Cup is subject to challenge at all times and has furnished some very interesting racing during the season.

The New York Athletic Club Yachting Department is now under the guidance of the following officers: Commodore, Emil Heuel; vice-commodore, Edmund A. Sumner; rear-commodore, Joseph H. Wallace. These three men form the committee with Commodore Heuel acting as chairman. Other officers are: Secretary, Chas. L. Burns, and treasurer, Alfred D. Fettretch.

The Knickerbocker Yacht Club, Port Washington, L. I., held its annual cruise from August 10th to 15th, inclusive. The yachts participating got under way on the morning of the 10th and ran in squadron to the Norwalk Islands. The run was in the nature of a race for which the Norwalk Yacht Club offered two prizes and the same organization acted as host at a smoker given at the clubhouse to the captains and their guests in the evening. On the 11th, the fleet made an informal run to the Thimble Islands where the boats remained all day Monday and gig races and other water sports were held. On the 13th there was a second squadron run to Shelter Island for which prizes were offered by the commodore for sailing yachts under and over 30 feet in length and cabin motor boats. A clam bake was held at Paradise Point on the 14th and the following day the squadron disbanded.

The Excelsior Yacht Club held its first annual long distance race for cabin cruisers on Sunday, August 4th. Entries were limited to motor boats 40 feet and under in length. The boats were sent away from the club anchorage at the foot of 60th street, Brooklyn, down through the Narrows and Lower New York bay to and around a stake boat anchored about one-quarter mile to the eastward of the bell buoy off Seabright, N. J.; thence to Ambrose Channel lightship and back to the club. The total distance was about 45 nautical miles, and while the course was not as long as that of some of the more popular ocean races, it took the contestants out into the Atlantic and proved to be a very efficient test, both of the seaworthiness of the boats and the navigating ability of the crews. The boats were started according to their time allowances, and the results of this method were so satisfying that the future races of the club will be handled on this principle. There were nine entries altogether, seven of which started. Mistake, owned by H. Gillis of the Bentley Yacht Club, was sent away at 9.30 a.m., followed by Geo. Moore's Narcissus and A. W. Stott's Hedvig II, both of the Excelsior Yacht Club, at 9:37:15. These boats were followed in order by Ola, owned by N. B. Krarup of the Excelsior club, at 9:48:21; Empire, owned by J. L. Luckenbach of the Atlantic Yacht Club, at 10:46:35; and Commodore W. E. Thomas' Fabian, of the Excelsior Yacht Club, at 10:58:57. Surprise, owned by F. D. Cadmus of the Staten Island Yacht Club, was the scratch boat, and started last at 11:11:55. Before the first mark was reached, Ola hit a sunken obstruction of some kind and sprang a bad leak in addition to wrecking her steering gear, and Mistake managed to crack two cylinders. Both craft limped home long after the finish, but had the satisfaction of getting there under their own power. From the moment she crossed the starting line, Empire began to walk right through the fleet and slipped over the line at the finish a safe winner, although Fabian was not far behind. Narcissus and Hedvig II finished less than three minutes apart about three-quarters of an hour later. The success of the system of starting according to time allowance was apparent at the finish, since everyone knew which was the winning boat as soon as the first craft crossed the line, and the regatta committee was saved the bother of answering dozens of questions and working over "dope sheets" to find the winner long after the race was over. E. J. Holzman (chairman), W. E. Thomas, H. Fountain, H. Hansen and Chas. Williams, who comprise the regatta committee, have promised that the race will be established as an annual event. A summary is given below:

Boat and Owner.	Start.	Finish.	Elapsed Time.
Empire, J. L. Luckenbach	10:46:35	3:32:30	4:45:55
Fabian, W. E. Thomas	10:58:57	3:56:34	4:57:37
Narcissus, G. Moore	9:37:15	4:26:44	6:49:29
Hedvig II, A. W. Stott	9:37:15	4:29:15	6:52:00
Mistake, H. Gillis	9:30:00	Disabled.	
Ola, N. B. Krarup	9:48:21	Disabled.	
Surprise, F. D. Cadmus	11:11:55	Did not finish.	

The Waterway League of New Jersey held a water carnival at Perth Amboy in connection with its third annual meeting, which drew yachts and motor boats from all the neighboring waters. The Raritan Yacht Club acted the part of host for the occasion. Unfortunately the rainy weather kept the carnival from attaining the hoped-for proportions, but enough craft turned out notwithstanding at-

Argo, Iolanthe III, Margaret II and Dacota starting in the class B race of the Chesapeake Bay Yacht Racing Assn. at Oxford. The insert is the auxiliary yawl Nenemoosha, the only boat that stuck out the blow which disbanded the entire fleet on the run to Annapolis.

mospheric conditions to make a very creditable showing. A business meeting of the league was held Saturday afternoon at the Raritan Yacht Club, after which a dinner was tendered to the officers and committeemen at the Packer House. In the evening an open-air meeting was held in City Hall Park at which short addresses were made by Henry B. Kummel, state geologist; Wilfred H. Schoff, secretary of the Atlantic Deeper Waterways Association; Henry B. Sherman, chief engineer of the Inland Waterway Commission; W. R. Capps, secretary of the New Jersey Canals and Terminals Protective Association, and Benjamin P. Morris, one of the vice-presidents of the Waterway League of New Jersey. The evening was concluded with the illumination of the boats in the harbor. Prizes were awarded for the boats presenting the best appearance. The following morning, the boats were formed in three squadrons for the parade and review in Newark Bay, which concluded the event.

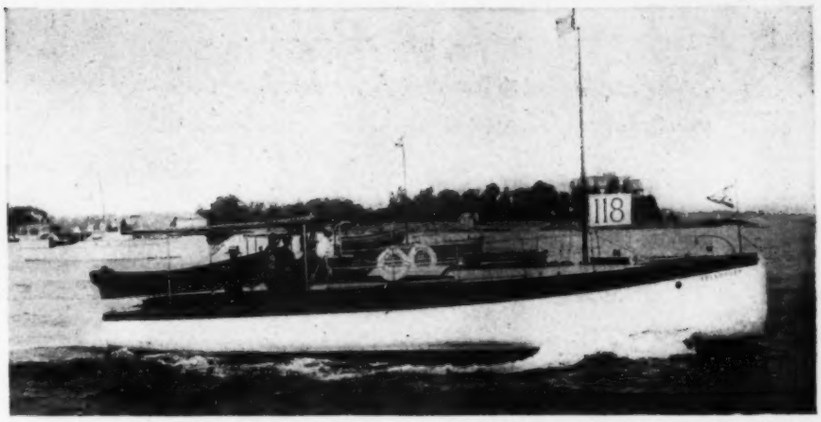
The Ventnor Yacht Club of Ventnor City, N. J., held a series of races for motor boats on July 20th, in which Chelsea Special, owned by J. B. Thompson, of the Seaside Yacht Club, covered a course of 10 miles in 22 minutes and 14 seconds. Her opponent was Caroline II, which received a time allowance of 4 seconds from Chelsea Special. This lead was overcome by the Thompson boat at the end of the first mile and Chelsea then opened her engine wide and covered the first 5 miles in 11 minutes and 12 seconds, making the last leg of the race in 10 seconds less time. Caroline

Commodore W. E. Thomas of the Excelsior Yacht Club.

II broke down soon after the start. The Caliph, owned by M. E. Brigham, of the Ventnor Club, won the 20-mile event for cruisers over 45 feet, the second place going to Quaker, owned by Commodore Jos. G. Swoyer, of the Chelsea Yacht Club and Luegeo II, owned by Geo. F. Fish, of the Ocean City Yacht Club, coming in third. The other boats finishing, were Isabeila II, of the Ventnor Yacht Club, and Eva Dor and Reba, both of the Ocean City Motor Boat Club. The 20-mile race for cruisers measuring under 45 feet was won by Mirna, owned by Joseph Snelienburg.

A Motor Boat Carnival on the Hudson.

The National Motor Boat Carnival, one of the most important motor boating events in the east, will begin this year on September 16th and continue to September 21st. The carnival this season will come back to the Hudson River, and the course will be laid out opposite Yonkers, where, as has been shown by previous experience, there is the least danger of the contestants being bothered by driftwood. There will be the usual series races in groups of three for the International, National and Interstate Championship cups, which will be open to speed boats up to 40 feet, from 40 to 60 feet, and 33 feet and under in length, as well as series races for cruisers 60 feet and over, over 40 feet and under 60 feet, and 40 feet and under in length. Besides the foregoing, there will be races for open motor boats. On Monday, the 16th, the events for cruisers and open boats will take place, beginning at 10 A. M., while the speed boats in the International class will start at 2 P. M.

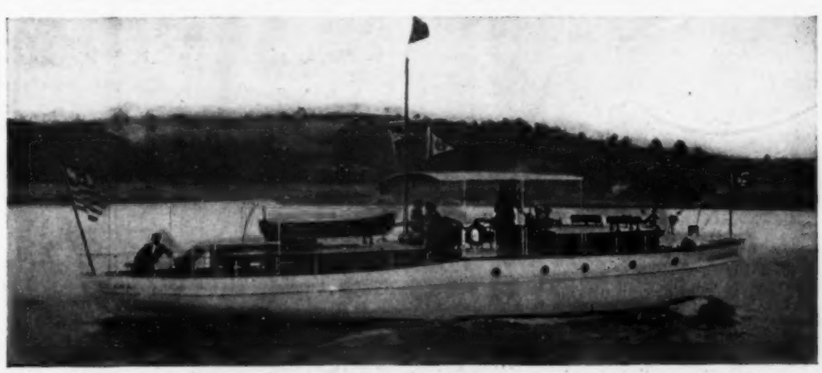


Start of the New Rochelle Yacht Club's race around Long Island on July 20th. Spindrift, the only boat to finish, is shown in the foreground. She is owned by C. R. Butler, of the Albany Yacht Club, and has proved to be a remarkably consistent winner this season.

The course will be 7½ miles, and the cruisers and open boats will cover it three times, while the speed boats will make the circuit four times, traveling a total distance of 30 nautical miles. Monday's program will be repeated the following day, and the cruisers and open boats will complete their series on the morning of Wednesday, the 18th. On Wednesday afternoon will come the races for the restricted classes of hydroplanes of the Motor Boat Club of America. These are open to boats under 20 feet in length, with a maximum cylinder volume of 615 cubic inches and a minimum weight of 2,400 lbs.; over 20 feet and not over 26 feet, with a maximum cylinder volume of 1,040 cubic inches and a minimum weight of 3,150 lbs.; over 26 feet and not over 32 feet, with a maximum cylinder volume of 1,600 cubic inches and a minimum weight of 4,000 lbs. The long distance races will start on Thursday, and the speed boats will go to Poughkeepsie and back, as heretofore, while the cruisers will make a run to Peekskill and return. Both classes, however, will not run so far down the river on the return leg as in previous years, but will round a mark at some point between Yonkers and Fort Washington Point. Races for speed boats of all classes will be held on Friday, which will be open to boats that have started and finished in one or more of the series races on Monday and Tuesday, the handicaps being based on the records made by the boats in the series races. These will be the only speed handicaps of the carnival. On Saturday morning there will be mile time trials open to all speed boats, and in the afternoon the final series of the speed-boat classes will be run off. Suitable prizes will be awarded in all contests, and the winners of the series races will be entitled to possession of the Championship cups for one year, or until other contests are arranged. The handicaps in the series races for all classes will be those of the A. P. B. A. The racing events of the carnival will be conducted, as in former years, by the Race Committee of the Motor Boat Club of America, for which Ira Hand, secretary of the National Association of Engine and Boat Manufacturers, will act as secretary. The carnival was held last year on Huntington Bay, L. I., but as it may be remembered, the water proved rather rough for the speed-boat class, and the action of those having the carnival in charge in bringing the event back to the smoother surface of the Hudson, should therefore meet with general approval.

To Race to Atlantic Waterways Convention.

Motor boatmen are taking a lively interest in the Fifth Annual Convention of the Atlantic Deeper Waterways Association, which will be held in New London, Conn., on the 4th, 5th and 6th of this month. The association, as is fairly well known in yachting circles, has for its object the construction of an inland waterway from Maine to Florida and the Gulf of Mexico. The city selected for the convention is in itself very appropriate for a meeting of this kind, as it has been an important port from the earliest days of American shipping and is now one of the chief yachting centers on the Atlantic coast. The yachting fraternity of the city have made great preparations for the convention as well as for the reception of the waterways men. A feature of the gathering will be a long distance motor boat race starting from Philadelphia and finishing at New London in time for the convention. The race is to be conducted jointly by the Atlantic Deeper Waterways Association and the Yachtsmen's Club of Philadelphia, which is also deeply interested in the inland route to the south. The arrangements have been placed in the hands of a committee made up of representatives from both organizations and headed by Ray Vanderhershen, who had charge of the Havana and Bermuda races. The course, as outlined, will be from a point off Race street pier at Philadelphia, down the Delaware to the Capes, a distance of 90 miles, thence to New York and down the Sound, finishing off the pier near the Griswold Hotel at New London. The boats will start on the morning of September 2nd, and are expected to arrive at New London on the morning of September 4th, which is the opening day of the convention. A prize representing a value of $200 will be given to the winner, and a $50 prize to the second boat. Although the plans for the race were late in developing, a large and representative list of entries has already been secured by the committee and an interesting contest is assured.



Clara, the flagship of Commodore Frank, of the Poughkeepsie Yacht Club. The Commodore is one of the veterans of Hudson River motor boating.

New Things for Motor Boatmen

A New Steering Wheel.

The Hall-Gibson Company, 16 Cortland St., Rochester, N. Y., have recently brought out a new type of steering wheel, as was mentioned in the August issue of this magazine, and we are enabled here to illustrate the type. The drum of this gear is of cast aluminum with the score cut in a taper, so there is no possibility of the cable becoming tangled or jammed. One turn of the tiller line around the grooved drum is sufficient, and it is not necessary to use a pin to hold it, since the cable becomes tighter as the strain upon it is increased. An additional feature of this wheel outfit is a rope guide which extends completely around the drum and eliminates any possibility of allowing the cable to slip off the drum. The column is 1½ inches in diameter, and automobile type of controls are furnished, extending through the steering column. Any length of column up to 24 inches is furnished for $15, and longer columns cost one dollar per foot additional.

* * *

Trimount Rotary Bilge Pump.

This pump is made by the Trimount Rotary Power Company, 144 Pearl St., Boston, and has a capacity of 10 gallons per minute at 85 r.p.m, or 18 gallons per minute at 150 r.p.m. It can be turned at this latter speed with very little effort, and as it develops at this speed a pressure of from 25 to 30 pounds, it has a suction lift of from 20 to 25 feet. It is cylinder-shaped and compactly built, and weighs complete but 16 pounds. This instrument is very useful as a bilge pump or in case of fire, and as it occupies but little space and is easily operated, it is equally suitable for a small boat. A larger type, known as No. 2, is also made, which has a capacity of 20 gallons per minute at 85 r.p.m. Both of these are made entirely of a bronze metal composition.

* * *

The Sturdy Plug.

The price of the plug made by the Sturdy Manufacturing Company, Chicago, has been reduced so that the plug is now sold in a set containing five plugs in addition to a regular spark plug case, for $4.00. As may be noticed from the illustration, the main porcelain of this plug is suspended against the bushing in such a way as to permit the upper spring washers to take up any amount of expansion or contraction, a construction which eliminates breakage of the porcelains or leakage of the gas. An unusual feature is the confidence the manufacturers have in these plugs, as an insurance policy is furnished with each set, guaranteeing the plugs unconditionally for the life of the outfit with which they are used. In other words, the company guarantees to keep the user supplied with spark plugs as long as his boat is in commission. A seven-plug outfit is furnished for six-cylinder motors for a price of $6.00.

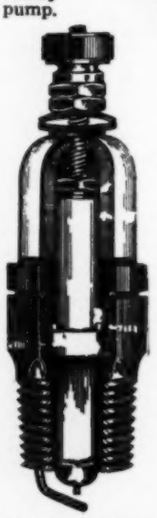
* * *

A New Carbureter.

A new carbureter which will be known as the Feps, and which will be manufactured by the Schoon-Jackson Company, Media, Pa., has recently made its appearance. This carbureter is an entirely automatic type and contains no springs, balls, cams or reeds. The Venturi tube is used for low speeds with a jet adjustable for the correct amount of gasoline. A flat leather-faced disc and a perpendicular shaft is used for intermediate speeds, this controlling the additional supply of gasoline and air for high speed and heavy work. A heavy mixture is automatically supplied also for easy starting. It is said that the use of this carbureter will result in an astonishing increase in the number of miles obtained per gallon.

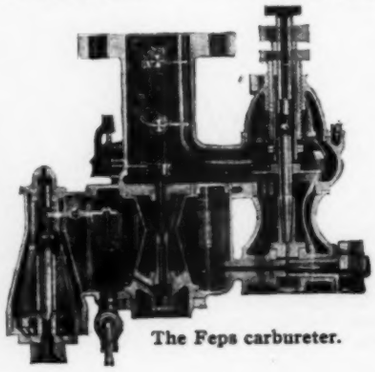
The Hall-Gibson wheel.

The Trimount rotary pump.



The Sturdy plug.

The V-Ray plug.



The Feps carbureter.

The Aermore Exhaust Horn.

A new model of the Aermore exhaust horn has just been placed upon the market by the Aermore Manufacturing Company, 1536 Michigan Avenue, Chicago, this new type representing a considerable advance in construction over the older models. Not only is the new horn made by machinery instead of by hand as formerly, but there is an improvement in the tone. The machine-made horn allows an absolutely uniform product, and among the other improvements is a hexagon nut instead of the round type used at the head of the horn. This construction makes the attachment of the horn a much more simple matter. A steel rod is now used as a core and the four tubes are anchored to this core by two plates, through which the core runs, so that the tubes cannot loosen from the frame. This horn operates upon the exhaust principle and a very rich tone is obtained by blending the four major tones. The horn will not clog, due to the relative positions of its parts, and as the air always passes in equal volume through each of the four air ducts the tone is always the same. There are no valves or sliding parts in the construction, and the fact that the exhaust enters the mouth of the horn in a straight line and so continues into the tubes, makes the horn practically self-cleaning.

* * *

The V-Ray Plug.

The Liberty Bell Company, 711 Citizen's Building, Cleveland, Ohio, are pushing the sale of their Liberty Bell and their V-Ray spark plugs, which have recently been placed upon the market. The Liberty Bell is designed for a car or a boat and measures 5 inches high by 5 inches wide at the base and sells ready for installation for $10.00. It can be mounted anywhere upon the boat, possesses a clear mellow tone and can be operated instantly by the hand or foot. The V-Ray spark plug has but two visible parts and is so designed owing to the penetration of its electrodes that a spark is delivered directly to the gas area, forming a very efficient type. A self-cleaning device is embodied in this plug and the plug is supplied with a terminal cap which fits every terminal made. The porcelain is placed at some distance from the electrodes to permit the splashing of oil and as the electrodes are made from Phoenix alloy, they will not corrode from heat. This plug is said to use less gas than the ordinary type, imparting at the same time smoother operation to the motor. The cost is $1.25.

* * *

Flexible Metallic Tubing.

The American Metal Hose Company, Waterbury, Conn., are manufacturing flexible metallic tubing which can be used either to carry gas from the tank to the acetylene lamps or to connect the intake of the carbureter with air from around the exhaust pipe to facilitate cold-weather starting, or to use as a covering for high tension cable. It is strongly made, finished in either polished brass or galvanized steel, and being provided with moulded rubber tips for use upon gas lamps, it does not leak. The tubing is very flexible and is adapted for making connections economically that would be very expensive as a rigid pipe. The cost of the lamp tubing is 40 cents per pair, and of the asbestos packed galvanized steel in the larger sizes, from 24 cents to 60 cents per foot from ¾ of an inch to 2 inches inside diameter.

THE PRIZE CONTEST IN QUESTIONS AND ANSWERS

THE "How to Build" questions appear to be the most popular ones, judging from the number of answers that are sent in. Again this month the articles and designs on "How to Build a Water-Tight Window" are excellent and should prove valuable to many who have been troubled continually by leaky windows, which, by the way, is one of the most common and disagreeable occurrences on board a boat. To build a window that is absolutely water-tight in all kinds of ordinary weather is not such an easy task and one which even the professionals often fall down on. Most of the designs given this month have some original feature about them that should overcome this tendency to leak.

THE subject of primary batteries for ignition purposes is a very broad one and one that should be studied from a scientific standpoint as well as from the practical side. Many of us at one time or another have felt like discarding the primary cell altogether and going over to other sources of electro-motive force, but usually the trouble was not with the batteries themselves but with the method of installation or maintenance. Several methods of connecting the cells of the battery are shown in the answers to the second question and each of them has its good features. It should be remembered that the most economical way to connect cells is so as to make the internal resistance of the battery equal the resistance of the external circuit.

THE QUESTIONS FOR THE NOVEMBER CONTEST ARE THESE:

1. Explain with drawings the construction of a marine railway for club use, that might be constructed by the members.
Suggested by W. B. Moores, Newburgh, N. Y.

2. Discuss the housing or protection of the hull for the winter. (Sketches are desirable.)
Suggested by Captain Bill, Pt. Washington, L. I.

3. Briefly tell of some interesting cruise from your actual experience, giving information of value to those who may wish to take the trip.
Suggested by G. B. M., Seattle, Wash.

ANSWERS to these questions addressed to the Editor of MoToR BoatinG, 381 Fourth Ave., New York, must be: (*a*) In our hands on or before September 25, (*b*) about 500 words long, (*c*) written on one side of the paper only, (*d*) accompanied by the senders' names and addresses. (The name will be withheld and initials or a pseudonym used if this is desired.) Questions for the next contest should reach us on or before the 25th of September.

THE PRIZES ARE:

For each of the best answers to the questions above, *any* article advertised in MoToR BoatinG, of which the advertised price does not exceed $25, or a credit of $25 on *any article* advertised in MoToR BoatinG, which sells for more than that amount.

(*There are three prizes, one for each question, and a contestant need send in an answer to but one, if he does not care to answer all.*)

For each of the questions selected for use in the next contest, *any article* advertised in MoToR BoatinG, of which the advertised price does not exceed $5, or a credit of $5 on *any article* advertised in MoToR BoatinG, which sells for more than that amount.

For all non-prize-winning answers published we will pay space rates.

When You Send in Your Answers, state what you will take if you win a prize.

A Water-Tight Window Sash.

Various Designs Suitable for the Various Types of Cruisers.

THE PRIZE CONTEST—Answers to the First Question in the July Issue.

A Practical Drop Window.

Prize Won: Planking and Hardware for a K. D. Boat.

THE form of drop-sash shown in sketch gives a waterproof window when closed and also one which will not rattle either when open or closed, which is a very annoying feature on some boats.

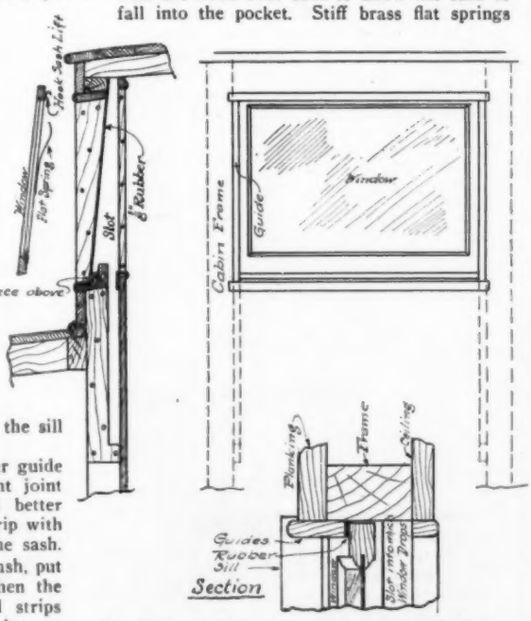
Half-inch thick oak guides, cut as shown, and screwed to the frame each side of the window opening leaves a slot ½ inch deep in which the sash slides.

Note the strip above the sill. This brings the joint between sash and sill above the corner, for water beating into the corner would come through under the sash if it went all the way down to the sill. Give the sill a good slant outboard.

Along the inner edge of the outer guide run a rubber strip to make a tight joint between guide and sash. A still better method is to use rubber weather-strip with the rubber edge pressing against the sash.

When putting the glass into the sash, put some putty into the groove first, then the glass and fasten it in with small strips screwed on. This will make it tight, yet easily removed when broken.

A brass hook and lift is provided at the upper part, a similar one at the bottom, but with the hook bent back to allow the sash to fall into the pocket. Stiff brass flat springs are provided at each side to press against the inner guide, keeping the sash tight against the outer guide. In the illustration the sash was removed to show it more clearly.



Mr. Kelley's design for a watertight window shows both rubber packing and springs.

The various moldings are added to make a finished job.

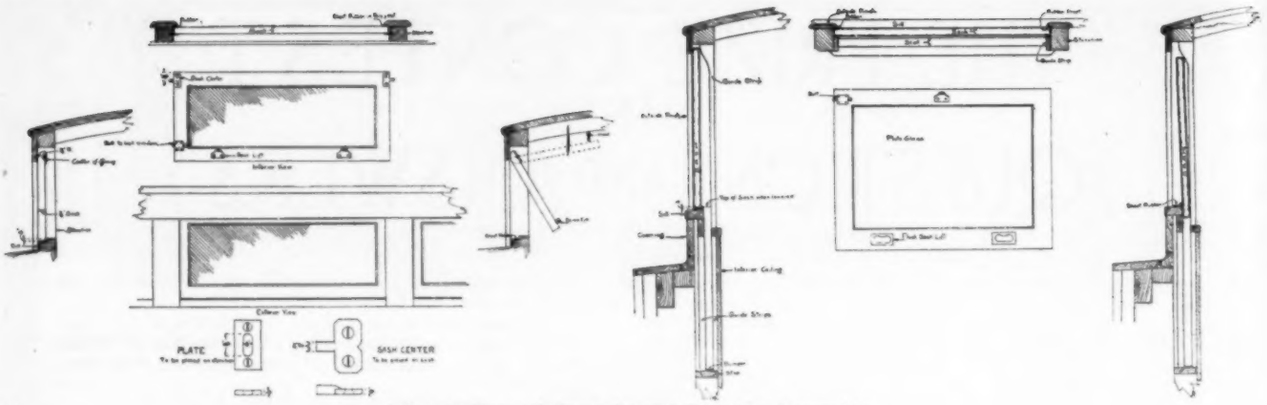
The sash when open is down in the pocket out of the way. To close the window, raise the sash all the way up. Push the bottom outward and drop it down over the high part of the sill till it rests on the strip previously mentioned. The springs will do the rest.

L. R. KELLY, Philadelphia, Pa.

A Window of the Swing-up Type.

IN constructing a watertight sash, the first requirement is that the material and workmanship be of the best. A poorly made sash never gives satisfaction, it either leaks badly or sticks too tightly to open, thus causing the owner to condemn that type. The windows and frames should be covered with at least four coats of varnish to prevent as much as possible the expanding and contracting of the wood, due to changes in the weather. If the wood did not shrink or swell a wood-to-wood joint could be made, but as this change of size cannot be prevented entirely, a sheet of rubber packing is placed in all exposed joints.

The "jump up and hinge" type is used in many cases in place of ports in trunk cabins,



Lift and drop windows described by Mr. Youngfelt.

and being of small size does not easily break or warp out of shape.

This hinging type has been tried out by the writer with satisfactory results. The amount of light and air let in through these windows is much greater than through ports, and although no rubber packing was used the heaviest rain or spray is all kept out. These windows were ordered from a mill and constructed of ⅞-inch oak with brass fittings and have not changed shape during one summer and winter.

Dimensions were purposely omitted as every boat has different requirements and in many cases each window is different from the rest.

T. T. Youngfelt, Chicago, Ill.

Swings forward and tightens with a clamp.

It seems to be the popular notion that that humble substance known as putty, is the cure-all for all the various leaks found in a water craft. Putty, while very necessary in its place, is emphatically not the medium to be used in a boat window, and most of the misguided builders find this out, to their sorrow, sooner or later. With so little to cling to, is it any wonder that putty cracks and cleaves from the glass or the frame.

With the sun baking and drying and the water hardening and shriveling, in a little time the putty is about lifeless, for it gets all this and more. So we will discard putty as not fitted for the task before us.

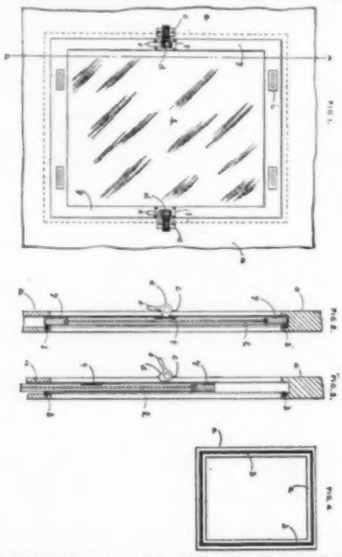
Pressure is the means I use to obtain a watertight joint; that is, in connection with the rubber pads or gaskets.

No. 1, in Fig. A, is the glass of the window, in this case ¼ inch plate. Nos. 2 and 3 are rubber gaskets made from soft sheet rubber. The hard, stiff rubber packing, made with several layers of cloth inserted, is not resilient enough to make a tight joint, unless undue pressure is exerted. No. 4 is a brass or bronze angle strip; this is fastened to the edge and outside face of the sash, mitered at the corners and soldered or brazed, and smoothed, so that it presents a flat, even surface, as this surface is used to make the joint with the frame.

Between the metal and wood is a thin layer of white lead to keep the water from leaking in this way. The strip of metal stiffens the wood considerably and keeps the wood from warping.

No. 5 is a frame, made of wood (as is the rest of the sash), and fitted inside the other part of the sash.

No. 6 is a small bolt, of which there are several in the complete sash. This bolt is preferably brass or bronze and is kept from turning by the head, which is square and countersunk in the wood before the brass angle is fitted. A washer keeps the burr from drawing itself in the wood when the inner frame is in place and the bolts are tightened. A space of six inches will be enough to make all the joints tight. The cross-section of the sash with the measurements will show perhaps more clearly



Window suggested by Mr. MacDonald, held fast against a rubber ring by cam levers.

the construction than the written explanation.

The dimensions, as given, will suffice for any window that will be used on a medium-sized craft.

In Fig. B, No. 1, is the outside frame of the window, the planking or side of the cabin as the case may be. No. 2 is a rubber gasket, very much similar to the ones used in sash. No. 3 is a piece of beading to hold the gasket in place and as a guide to the sash. No. 4 is a heavy piece of sheet steel or brass, about tenguage or heavier, the shape of the window opening. This is much better if in one piece; this should be set in white lead and securely screwed in place.

The lower end of the bolt F is shown in Fig. B. This slides back and forth in the slot, to the dotted line, drawn vertically through the beading No. 3.

Fig. D is a section of No. 4B and shows a slot, through which the bolt F is placed. The square shank of the bolt fitting the slot, which prevents its turning. No. 5 is a space in the frame, under the strip No. 4, in Fig. B, in which the head of the bolt slides.

Fig. C is a steel or brass clamp or crab and is used to distribute the pressure from one screw, over a larger area than the screw alone. This can be made by a blacksmith or at a foundry, and should be well made in either case.

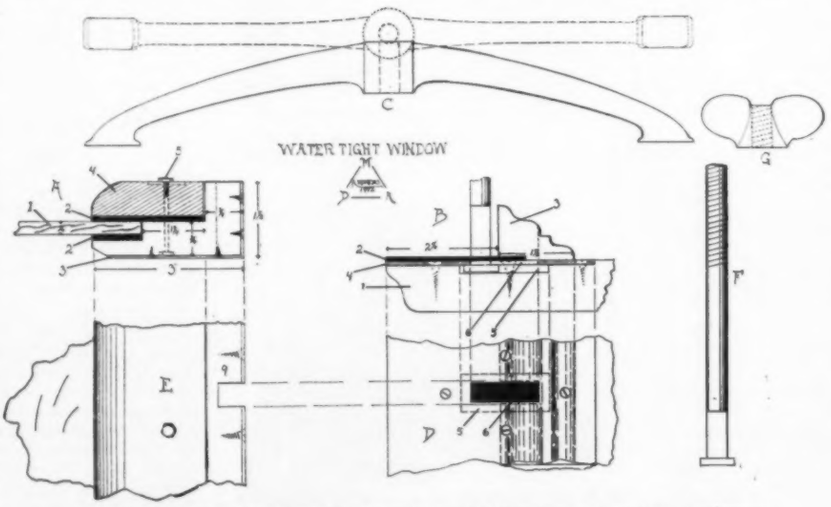
Fig. E is a top view of Fig. A and shows the notch or recess that the bolt F slides into when the window is shut and fastened. The clamp C is placed along on No. 9. A slight depression in the strip where the feet come will prevent the clamp from becoming misplaced through vibration or jar.

Fig. 7 is a brass or bronze bolt, with a square head or shank. This is of a length to pass through the pieces B and A, and also through clamp C and thumb-screw G. In this case it is six inches long.

If the window is to be hinged, it should swing in and the hinges should be toward the bow of the boat. The hinges should be adjusted so that the closing of the window will bring the hinged side in close contact with the outside frame.

When a sliding sash is desired, the clamps on three sides are the same as before. The fourth side is toward the direction the window slides. The beading, No. 3, in Fig. B, is omitted from this side, and the part of the slot which would be under the beading, is enlarged so that the bolt may be entirely withdrawn when the window is to be opened.

While this may seem like a compli-



A practical design for holding the window tight suggested by Mr. Andrews.

cated affair, it is a means of keeping out all water for all the time, which some of the makeshift methods will not do, and is well worth the time and money spent upon it.

MELVIN D. ANDREWS, Canandaigua, N. Y.

Modified Drop Window.

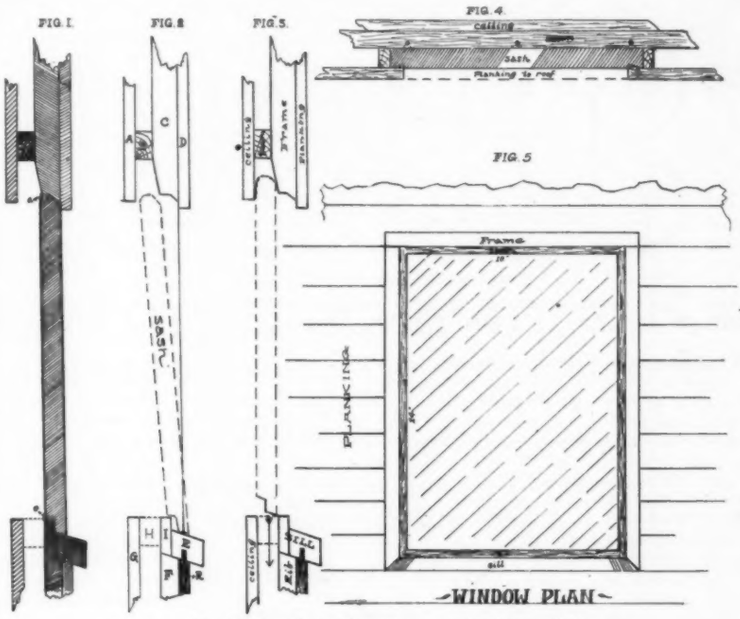
THIS method comprises means whereby the above results can be obtained in a simple, cheap and effective manner and can be applied to existing windows as well as to new constructions.

Referring to the accompanying drawings: Figure 1 is a front elevation of this arrangement. Figure 2 is a sectional view on the line AB, figure 1, showing the window in the closed and watertight position. Figure 3 is a similar view to figure 2, showing the window partly opened. Figure 4 is a front view, to a reduced scale, of the window frame, showing the rubber ring embedded in the casing.

The usual window frame or casing (a) is grooved around its inner face and a rubber (or leather) ring (b) inserted in the groove as shown in figure 4. In place of grooving the casing the rubber or leather ring (b) may be cemented or nailed to the frame. On each side of the window frame (a) and about half way between top and bottom are attached bearings (c) which carry cams (d) operated by handles or levers (e). If desired the window sash (g) which carries the glass (h) may be provided with protecting plates (f) or the faces of the cams may have strips of leather or other suitable material cemented or countersunk screwed thereon to prevent scratching of varnish or woodwork. The operation of this device is as follows:

To open the window, raise the cam levers as shown in figure 3. This allows the window sash to come away from the rubber ring where it was seated and allows the sash to be raised or lowered as desired, the usual or similar sockets (i) being provided for that purpose. If the sash is not counter-balanced the cams can be used to hold the window open at any desired position. If necessary the cams can be secured to the bottom of the frame so as to allow the window to be held open to its full extent. To make the window watertight, weathertight and prevent shaking and rattling raise the sash to the top position and pull down the cam levers. This presses the window sash against the rubber and makes contact all around, as shown in figure 2.

NEIL M. MACDONALD, Hartford, Conn.



Mr. Tiffany's design for a watertight window.

Simple and Watertight.

THE window shown in the accompanying sketch is designed so that it can be readily opened, and yet when closed, as shown, is perfectly watertight. The frame is of wood, and rabbeted as shown on plan; and the sash is held in place, when closed, by two sash fasteners (a) on the side towards the top. To open the window, pull back the fasteners, and pull the top back; then by lifting the sash up, giving clearance to the bottom, the whole may be lowered into the space provided for same. Rubber weather strips could be used in facing-up the rabbets, if so desired.

Fig. 1 shows side, sectional view of sash in place. Fig. 2 shows top of sash pulled away from frame. Fig. 3 shows sash raised and ready to be lowered out of sight. Fig. 4 shows top view of sash and frame, showing rabbets to prevent water from entering. Fig. 5 shows front view of frame and sash in place.

The construction of this window is simple and efficient, and under bad conditions of spray and rain will not leak, because of the rabbeted construction of all four sides. The sill slants and thus helps to form a resistance to water. 1½" x 1½" stuff is used for the sash shown in the illustration, and the outside diameter of same is 18" x 24".

This window is practical and can be easily made. Thickness of wood and variety of wood will vary according to size and style of boat, but the principle of construction can be maintained throughout, in all types and sizes of boats.

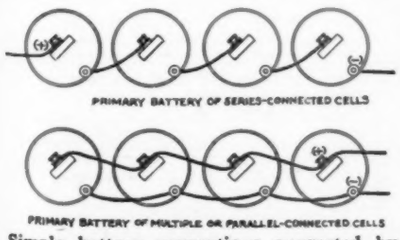
S. G. TIFFANY, Vancouver, B. C.

Primary Batteries for Ignition.

A Discussion of the Best Grouping of the Cells, Installation, Maintenance and Testing for the Best Results.

THE PRIZE CONTEST—Answers to the Second Question in July issue.

BY the term "primary" one understands a cell which contains within itself all the elements necessary for the generation of the electric phenomenon, upon closure of the circuit. There are numerous forms of primary cells, both of the "open" and "closed" circuit types, many possessing more or less troublesome faults which prevent their use as a source of ignition. The discussion of the chemical reactions of each cell is obviously impossible in an article of this kind. It is sufficient to note, for purposes of ignition, the selection has narrowed to two—the dry cell, and one type of wet cell, the Edison-Lalande.



Simple battery connections suggested by A. G. W.

A Balance between Wet and Dry Batteries.

Prize Won: Lumber from Jordan Bros.

The one great fault in the dry cell is its tendency to polarization, whereby the current flow is reduced or obstructed completely. This fault develops under prolonged usage. The trouble is absent in the above-mentioned wet cell, because of its peculiar chemistry, and is the one reason for its great longevity.

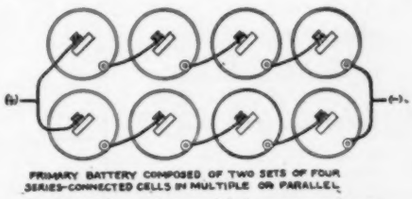
If we attempt to draw conclusions from comparison of six dry cells with an equal number of Edison cells we find the latter so superior as to length of life, evenness of current during a given period, etc., that the outcome is obviously favorable to the wet cell. Consequently matters must be equalized if possible. There is but one way this may be done with satisfactory results.

If now 16 dry cells be wired in series of four, and these series connected in multiple, there will be a battery having an ampere-hour capacity quite equal to that of six wet cells, because the infinitesimal amperage contributed by each cell, creates so little disturbance in the unit that it is quite able to overcome the offending hydrogen through the normal chemistry of the cell. Polarization is reduced to the minimum and the life of the cell prolonged.

A large personal experience has taught me the importance of the following data:

(1) The cells must be absolutely dry at all times.
(2) Never more than 60-90 days old.
(3) They must show at least 20 a.h. per cell.
(4) Wiring should be as above.

In conformity with these conditions, particularly the first, I make a box of pine, ¾-inch stuff, sufficiently large to contain the predetermined number and pour therein melted paraffin, ¼-inch deep, and allow to harden. The cells are now placed and wired as de-



A. G. W.'s series-multiple connections.

scribed, the common terminals being brought to the binding-post screws let through the box sides near the top. Each cell is carefully spaced and the interspaces filled with squares of wood. Now pour over the contents the melted paraffin that has been cooled to as low a degree as possible consistent with flowing. Cover the terminals completely, place the lid and the outfit is ready.

There is in every primary cell an internal activity which will in time render the cell inert. (This is aggravated by the heat.) It is for this reason the second condition above was mentioned. In recently made cells of proper voltage and amperage it is a small factor. The natural chemic deterioration cannot be overcome for this activity is the source of the current.

From the standpoint of economy and maintenance, the outfit I have described is cheaper in every way. The initial outlay for the wet cells is far greater than for the dry cells. The annual renewal of the former is about as costly as the entire new dry cell outfit. Furthermore, the jars of the wet cell are liable to accident and a cell put out of commission. Then again, they must be set nearly level. The space occupied by the wet cell outfit is considerable and of real importance on a small boat. The dry cell battery box can be stowed in an obscure place, it being only necessary to provide means for examinations of the outside connections should occasion require.

A fruitful source of trouble in dry cells is an improperly adjusted coil vibrator. The manufacturers of coils provide a piece of very delicate apparatus with a maximum and minimum capacity, both as regards voltage and amperage or rate of discharge, beyond which limits it is not economical to go. To secure this adjustment an ammeter must be used, and the vibrators set at proper tension. Under no circumstance should sound be depended upon to secure this result, especially in attempting to standardize two or more coils, because of the many factors entering into its production. These remarks are equally applicable to coils used in connection with make-and-break motors, possibly to lesser degree.

L. H. Prince, Philadelphia, Pa.

Compound-Multiple Connections.

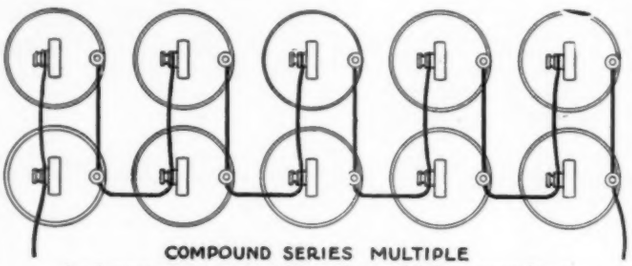
THE two types of primary cells in common use for ignition are the dry and Edison, the construction of which has been described in MoToR BoatinG. The former deteriorates rapidly; in fact, it starts from the minute it is made; the latter only when in action are its elements lost.

Methods of connecting the cells to form the battery have also been described before, with the possible exception of compound series multiple which will cut down battery expense about one-half. (See sketch). This may apply to any battery where a large current flow is required. However, exception is taken in the Edison battery. The added cost for the extra cells needed to connect in compound series multiple would be waste since there is a known output which is practically constant until the elements are exhausted.

In testing dry cells readings taken when no current is delivered to the circuit are of no value. To be a "check" each cell must be read since, if all in the battery are "read" as a whole, one cell might be dead or very near it and the result would be bogus.

Tests on the Edison cells are unnecessary since there is no deterioration. All things being equal one set of six cells with new elements each season will last the whole season through for the average boat.

For a low maintenance charge, batteries should be placed where there is a minimum of vibration and heat. The former loosens the filling around the carbon (in dry cells) which results in poor contact, increased interval resistance; the latter dries up the water in the electrolyte. Heat will also affect the Edison cell in the same manner, *i. e.*, evaporate the caustic solution.



COMPOUND SERIES MULTIPLE
An improvement upon the series multiple connections suggested by C. Peterson.

That all electrical apparatus must be kept dry is axiomatic.

Connect your battery (dry) in compound series multiple, keep it away from wet, heat and vibration; don't short circuit it with a screw-driver to see if it sparks and your ignition cost curve will take a sudden drop.

C. Peterson, Brooklyn, N. Y.

Dry Cells in Duplicate Sets.

IGNITION for primary current may be obtained from one of two distinct sources: dry cells or wet cells. There are several forms and makes of wet cells on the market, but as these require more or less attention they are not as popular as dry cells which are generally conceded to be best for marine use. No trouble will be experienced with the use of dry cells if due care is given to protect them from moisture.

New dry cells should be tested when bought and those of average size should show from 17 to 25 amperes. Occasionally during use the cells should be examined and tested; cells showing less than 8 amperes will not give satisfactory results and should be replaced by new ones. The action of the set will be impaired by one weak cell which should be removed even though a good one is not immediately put in place of the one run down. In testing cells the ammeter should be kept in contact only long enough to obtain a reading, as a direct short circuit is formed and if held in place the strength of the battery is diminished.

Figure 1 shows how the cells are connected in a series for ignition use, the carbon of one battery to the zinc of another. The batteries should be placed in a box with partitions to prevent the negative posts of one battery coming in contact with the zinc of the adjacent one, thus causing a short circuit. Bull-dog connectors are very good and well worth the little they cost. From four to six or eight cells should be used in each set, a weak spark would result if fewer cells are used, and the current from a greater number is likely to be of such intensity as to burn the points of the igniter or spark coil.

The practice of fitting dry cells in duplicate sets is a good one, as the first set will recuperate while the other is being used. This shows the advantage over wet cells or storage batteries which have less recuperative powers, and after they are nearly discharged the strength fails very rapidly. Run-down dry batteries can be temporarily revived by pouring water in a hole punched in the top.

Two sets of batteries are sufficient when used in conjunction with a magneto, but where dry cells alone are used for ignition considerable economy may be had from a series multiple connection. By connecting four cells in series several sets can be made. The sets are then connected in multiple. This method results in final saving, although more cells are required.

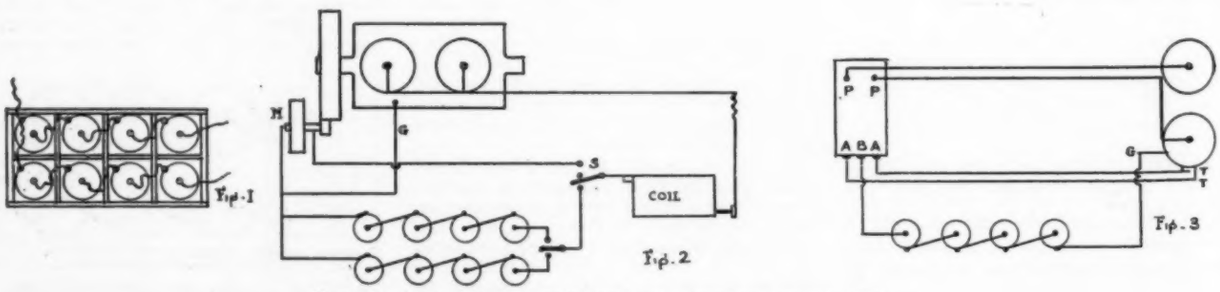
Defective wiring in the primary circuit may be one cause of the absence of buzz of the vibrator as the flywheel is moved until contact is made by the timer. A spark plug should be laid on the cylinder with the secondary wire in contact. The spark will jump across the points if the wiring is perfect. No spark and a buzzing vibrator shows the secondary circuit to be at fault. The trouble usually is a dirty spark plug.

Rain or damp weather causes the most common of ignition troubles, a "ground." It is the current jumping from a chafed portion of the wire to some nearby metal. A careful examination of the wiring will disclose the trouble and the misfiring will stop after moving the wire out of contact with the metal. The symptom of a grounded connection between timer and coils, is the continuous action of the affected coil, in the jump-spark system. No spark shows a grounded connection between battery and coil which will soon exhaust the batteries.

Complete wiring for two-cylinder make-and-break ignition is shown by figure 2. The use of a duplicate set of batteries requires a three-point switch allowing either set or the magneto to furnish current. The magneto is shown connected parallel with the batteries, one terminal running to the ground and the other being connected to the switch.

The connections for a five-post or terminal coil for a two-cylinder engine is shown by figure 3. The ground wire is dispensed with, one battery wire being grounded the other connected to the B post; AA posts are wired to the timer, PP going to the plugs. The B and ground posts remain single, while the number of A and P posts is determined by the number of cylinders.

J. Frank Ehlers.



Several wiring schemes submitted and described by Mr. Ehlers.

Recommends Dry Cells.

PRIMARY batteries composed of either wet or dry cells are very efficient sources of electrical energy for ignition purposes, but for marine work the wet cell type is very rarely used. Dry cell batteries, due to their low cost, simplicity and accessibility are extensively used and when properly constructed and installed produce extremely satisfactory results.

A single dry cell has a voltage of approximately one and one-half volts on open circuit, and as a properly constructed induction coil requires about six volts for high-tension ignition purposes, it will be necessary that the cells forming the battery be so connected as to produce the desired voltage. This is accomplished by connecting the cells in series, that is, connecting the carbon or positive terminal of one cell to the zinc or negative terminal of another and so on from cell to cell. In a series connected battery the voltage will be equivalent to the combined voltage of the individual cells while the current output will be the same as that of a single cell.

Owing to the increase of internal resistance caused by connecting cells in series, it is good practice to add one more cell than is theoretically required to produce the desired voltage. A large number of cells will produce a hotter spark, but as the excessive current will burn the points of the igniter and cause pitting and sticking of the vibrator, their use is not recommended.

In order that the total amperage of a battery may be increased, the cells must be connected in multiple or parallel, that is, all the carbon terminals are connected together, as by a single wire, and all the zinc terminals similarly connected together. The current output of a battery thus formed will be equivalent to the combined output of each cell, while the voltage will be the same as a single cell.

By connecting batteries in multiple, the interval resistance of the battery is reduced and permits of a maximum flow. The demand on the individual cell is also reduced as each cell furnishes only a small portion of the total current required. The life of a battery depends upon the rate at which it is discharged and for economical reasons it is necessary to keep the current per cell as small as possible. Enough cells should be connected in multiple to reduce the current output to at least one-quarter of an ampere per cell.

For ignition purposes the most efficient and economical results are obtained from a primary battery by connecting the cells in series-multiple, thereby embodying in one battery the advantages of the different connections previously described. It is also advisable to have the batteries in duplicate in order that the load may be transferred from one to another at proper intervals by means of a double-throw switch.

For testing dry batteries an ammeter is preferable. Never allow the current to flow through the instrument for a longer time than is absolutely necessary, as a prolonged contact is injurious to both the battery and the meter. Batteries should be tested immediately after a run, for, if allowed to stand for awhile, they will recover and show a fictitious value. When an ammeter is not available, a rough estimate of the condition of a cell may be made by fastening a wire slightly to the zinc terminal and lightly touching the carbon electrode with the free end. A small puff of smoke and a small, red spark at the point of contact denotes that the cell is in good condition. Never connect old and new cells together as the old cells limit the output of the new because of their high resistance. Test each cell separately.

A battery that has been temporarily weakened by hard service or by a temporary short-circuit, will usually recover its strength if allowed to stand for a short time, until the depolarizing material absorbs the hydrogen. Dry cells may also be recuperated by punching a hole through the sealing compound at the top of the cell and pouring in a solution of sal ammoniac and water, or water alone. This operation will decrease the internal resistance and increase the current for a short time.

A. G. W., Norfolk, Va.

Starting Boats in a Race.

Several Schemes for Getting the Boats Away From the Starting Line With the Least Possible Confusion.

THE PRIZE CONTEST—Answers to the Third Question in July Issue.

Informs Captains of Their Handicaps Before Start.

Prize Won: Ship Clock from Waltham Watch Co.

IN starting a race on handicap times where the boats are to start successively, one of the simplest and most practical methods is as follows: Racing numbers having previously been assigned to all contestants, they are informed in the instructions regarding their handicap and starting time. Also, that their racing number will be displayed from the committee boat 30 seconds before they are due to start. Attention to the numbers may be called by whistle or horn at the time of displaying them. The starting gun is fired on the exact time as determined by the handicaps.

For the numbers to be displayed from the committee boat, it is found simplest to make a large pad similar to a calendar pad, the number being as large as may be deemed necessary to insure legibility. The numbers are so arranged that the first boat to leave will have its number on the top of the pad, and the last boat its number on the bottom. As each boat starts and passes the committee boat its number can be rapidly torn off the pad thereby exposing the number of the next starter. This process is repeated until all the boats have been sent off.

The following can be used as a guide in drawing up instructions for any particular race:

Start and finish line will be directly in front of the clubhouse and will be an imaginary line from the flagstaff to the committee boat.

Course and turning points. (Here such information can be given descriptive of the course and the nature of the turning points.) Time of start—

Preparatory signal, 2 guns, 8:55 a.m.

Number shown for first boat, 30 seconds before 9:00 a.m.

Start, first boat, 1 gun, 9:00 a.m.

Your number will be hoisted from the committee boat exactly 30 seconds before you start and displayed for 30 seconds before the starting signal of 1 gun, at which signal the boat bearing the corresponding number should cross the line.

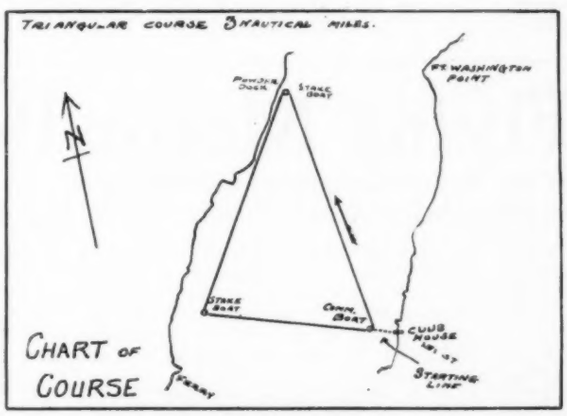
The following are the allowances and times of boats entered—

Name	Racing No.	Allowance	Time No. Is Shown	Time of Starting Gun
———	1	0-15-12	9-00-00	9-00-30
———	2	0-12-06	9-03-06	9-03-36
———	3	0-05-35	9-09-37	9-10-07
———	4	0-04-10	9-11-02	9-11-32
———	5	0-02-27	9-12-45	9-13-15
———	6	Scratch	9-15-12	9-15-42

Every effort should be made to make the instructions furnished to the contestants clear and easily understood by every owner, giving them full details as to just where each and every turning buoy is located, the number of times to go around the course, signals for a postponement of the race, etc., etc. Notice should also be given that no coaching or information will be given from the committee boat from the time of the preparatory signal until after the last boat finishes and that no persons other than the committee will be allowed aboard the official boat.

This method of starting boats on handicaps has been tried and found to be simple and efficient, boats being able to get away without any confusion or interference.

F. W. HORENBURGER,
New York.



THE N. Y. MOTOR BOAT CLUB

CLASS "A"

OWNER J. THOMAS
BOAT PHOEBE
RATING 42.0
RACING COLOR WHITE
RACING NUMBER 6
YOUR CLASS STARTS AT 3:00:00
YOU START AT 3.18.16
AFTER NO 4
WHICH STARTS AT 3:14:40
YOUR NUMBER WILL BE DISPLAYED FROM THE JUDGES BOAT 30 SECONDS BEFORE YOU START.
A GUN WILL BE FIRED AT YOUR STARTING TIME.
START UP RIVER AND GO 4 TIMES AROUND THE COURSE
SET YOUR WATCHES WITH THE TIME KEEPERS.
LEAVE ALL STAKE BOATS ON YOUR PORT SIDE.
ANY PROTEST MUST BE IN WRITING AND FILED WITH THE COMMITTEE BEFORE 6 PM

Excellent form of racing conditions with which to furnish each contestant.

Racing Numbers Displayed from Committee Boat.

IN the following scheme of sending boats away according to a prearranged schedule of handicaps, each entrant should be given the usual distinguishing number to be displayed in some conspicuous place upon the hull. A duplicate set

of these numbers should be prepared for the use of the regatta committee, these being painted in bold, black figures upon sheets of heavy white cardboard about two feet square. A simple frame should be erected upon the highest accessible point of the committee boat upon which these cards can be hung in plain sight of the starters.

A blast of the whistle will call attention to each number as it is displayed. Each number will be displayed for a stated interval (say 30 seconds) before the gun is fired for that boat to start. The number will then be removed, leaving the frame ready to receive the card bearing the next starter's number.

The official instructions may be worded in part as follows:

Boats will be provided with their distinguishing numbers at 9:00 a.m., upon application on board the committee boat. These numbers must be displayed in a conspicuous place upon the hull of each contestant. Boats not showing official numbers will not be permitted to start.

A preparatory gun will be fired from the committee boat at 9:45 a.m. and a black ball hoisted. At 10:00 o'clock a whistle will be blown, the ball hauled down and the number of the first boat to start will be displayed on a stand or frame erected on top of the committee boat's pilot house. At the expiration of the 30 seconds a gun will be fired for the first boat to start and her number will be removed. Each succeeding boat will be started in the same manner, a whistle announcing that a new number has been displayed and in 30 seconds a gun will give the signal to start until all the boats have been sent away.

Contestants should be on the lookout for their own numbers and when shown they should be prepared to cross the line at the expiration of the 30-second interval as they will be timed from the gun and not from their exact time of crossing.

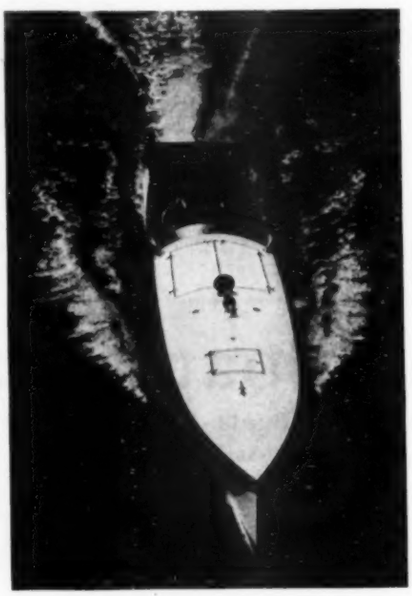
ALLAN O. GOOLD, Portland, Me.

Advises Starting from Stakeboat.

THE system of handicapping racing motor boats that is outlined below was not designed in an effort to make the present A. P. B. A. rules entirely satisfactory, that is impossible, but it was designed in an effort to make the rules so that a spectator at the races could tell when the races were over what boat had won, instead of going home and not knowing until the next day when the regatta committee got through figuring out the handicaps.

In order to give the spectator a chance to enjoy motor boat racing it is necessary to allot the handicaps at the start of the race sending the boats off at the proper intervals, instead of in a bunch. Theoretically all the boats should finish at the same time.

The great trouble has been to send the boats off at the right time, as very often there is not more than a second or two between the starting times of two boats. The most satisfactory method of overcoming this trouble is to start the boats from stake boats in the same manner as a rowing race is started. The average motor boat race does not have more than ten entrants. The starting time of the scratch boat being at least five minutes after the first boat has been sent off.



Kingfisher, a 40-foot runabout, owned by E. L. King, of Winona, Minn. She is driven by an 8-cylinder 150 h.p. Sterling racing engine and was built by the Milwaukee Yacht & Boat Company.

As an illustration, we will say that we are starting a race between eight boats. In this case four stake boats will be enough; these will be moored just a little back of the starting line. In addition to the regular racing number, each of the contesting boats should be given a starting number, printed on a piece of cardboard. Each of the stake boats should also show their numbers in a conspicuous place. In our case we will give two numbers to each stake boat. The boat nearest the committee boat or stand should display Nos. 1 and 5, the next boat Nos. 2 and 6, the next Nos. 3 and 7, and the furthest stake boat from the committee should display Nos. 4 and 8.

A preparatory gun should now be fired. This gun will give the first four boats to start time to get to their places alongside the stake boat showing the same number. Contestants carrying Nos. 5, 6, 7 and 8 should be forced to keep well back of the line so as to be out of the way of the first division. The second gun is now fired and a red cone hoisted. This gun warns the racers that the first boat will start in 30 seconds. When the half minute is up the cone is dropped, and the gun fired sending No. 1 away. The next gun sends No. 2 away, and so on. As No. 1 is sent away, boat No. 5 comes alongside the stake boat that is vacant. In this way there is plenty of time for all the boats to be ready when their time comes, and there is no chance of having a foul at the start as is often the case when all the boats are jockeying around the line. There would be no chance of the operators mistaking their time, as they can see the boat next to them start, and consequently know that the next gun is theirs.

The racing boats should not tie up to the stake boats, but should be held alongside by a man in each of the stake boats. Of course, the number of stake boats can be modified to suit the number of racers.

GERALD T. WHITE, New York City.

A Flying Motor Boat.

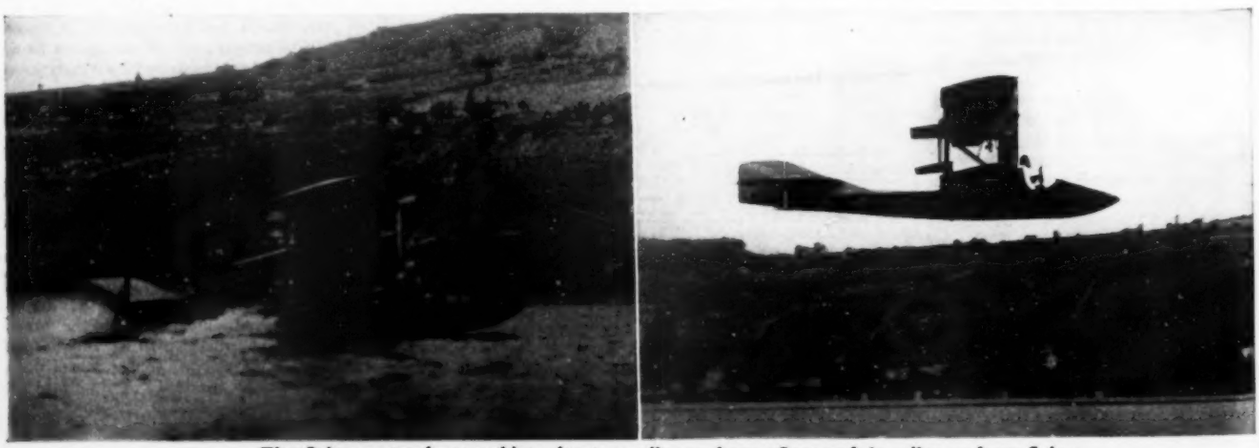
Latest Development of the Hydro-Aeroplane Invented by Glenn H. Curtiss Combining the Advantages of Motor Boat and Aeroplane.

GLENN H. CURTISS, who has experimented widely with the hydro-aeroplane, has just brought out a "flying boat," views of which are shown below and which he declares is an absolutely safe flyer.

Mr. Curtiss calls the machine the Flying Boat, because it combines most of the characteristics and advantages of the speed motor boat, and the flying machine. As a motor boat it is as comfortable, as easy to handle and as seaworthy as any other motor-driven craft of similar size, and as a speed boat it can beat anything that runs on water. The operator and passenger sit in a roomy, comfortable cockpit, side by side, fully protected by a collapsible hood.

In the official tests of the Flying Boat on Lake Keuka, at Hammondsport, N. Y., it carried three persons, and can take care of four. It made a speed of fifty miles an hour as a motor boat, over a measured course, and flew sixty miles an hour.

"With this craft the dangers common to the land aeroplane are eliminated and safe flying is here," said Mr. Curtiss after the trials. "It will develop a new and popular sport which will be known as aerial yachting."



The flying motor boat making about 50 miles an hour afloat and 60 miles an hour flying.

The Strength of Motor Boats.

The Various Stresses and Strains That are Set Up in a Boat's Structure and How the Different Parts of the Hull should be Designed to Best Withstand Them.

By Lawrence B. Chapman.

Mr. Lawrence Chapman's series of articles on the designing of motor boats which appeared in the February, March, April and May issues of Motor Boating were, we believe, by far the best treatise for the amateur that has been published. The article below by the same writer deals with the subject of designing to meet the stresses and strains to which a motor boat is subjected and it shows that weight alone is no measure of a boat's strength and that a little thought in placing the strengthening members will do more to produce a strong boat than will the all-too-popular practice of making all members needlessly heavy.—Editor.

AS many of the motor boats built to-day, especially those designed or built by amateurs, are structurally very weak; and where heavy construction is used for the sake of strength the material is so poorly located, it seems that a discussion of this subject is greatly needed. No one would think of designing or building a bridge or similar structure without first understanding the forces acting and the stresses set up and then studying the proper way to place the various members to resist these stresses. Why then should one attempt to design a motor boat and lay out the construction plan unless he understands the forces set up in a seaway? Unless one properly understands these forces and their effect upon the boat, he cannot place the various structural members to the best advantage. Many builders and designers copy the conventional methods of construction without ever giving a thought to the question of stresses or perhaps scarcely knowing that any exist. A bridge is indeed an important structure to build but it has fixed supports—a boat is worse, it has constantly shifting supports. Besides this a boat must be tight and have sufficient strength not only to withstand the various loads that come upon it but it must withstand the action of the sea and the stresses set up by the engine.

I shall endeavor in the following article to point out some of the forces acting, show their cause and the proper way to resist them. It is not my intention to give any rules or fixed methods, but to present the subject as a whole in such a manner that the reader, with a little thought, can place his material to the best advantage. Anyone can build a boat sufficiently strong by putting in a great quantity of material, but it is only the skillful designer who can produce a strong, stiff hull with the smallest amount of material. It should be borne in mind that a boat is a structure, not a huge accumulation of material.

Suppose, first, we consider the effect of the weights making up a boat. We have the weight of the hull pretty evenly distributed but the other weights as engines, fuel, shafting, anchors, etc., are concentrated weights. We can represent this in diagrammatic form, as Fig. 1, where AB represents the length of the boat and the area under the solid line the weights (the original drawing was 12 in. long and in it 1 sq. in. = 200 lbs.). In this case the greatest weight comes just aft of amidships, due to the engines. The various areas are drawn one over the other representing the weights. Thus an engine weight of 1,600 lbs. would be drawn in the length of the engine and containing 8 sq. in. Fig. 1 gives an example of how a boat is loaded and if AB represented a bridge we would have quite a serious problem on our hands for we would then have two supports, A and B, and it would be in danger of breaking, due to the great load.

How is this load of perhaps 5 to 125 tons supported in a boat? It is the buoyant or upward force of the water that gives the support but unfortunately this is not a uniform support. If the boat were resting upon level ground it would be supported uniformly and we could let the matter rest. No doubt the average boatman believes that the water gives a uniform support to all floating objects, but this is not the case as we shall soon see.

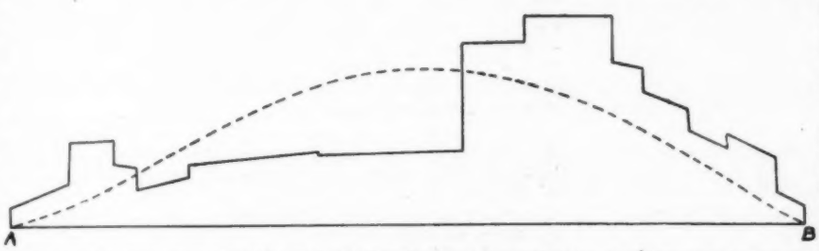


Fig. 1.—Representing the fore and aft distribution of weights by the distances between the solid line and the base line A-B.

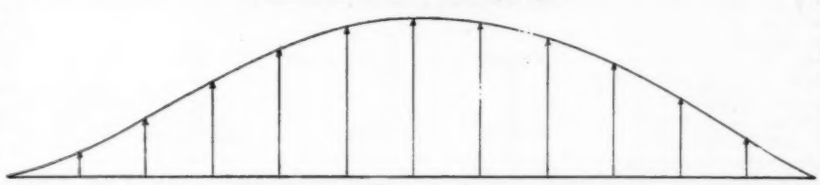


Fig. 2.—The curve of sectional areas. The area of any particular section is represented by the distance between the curve and the base line.

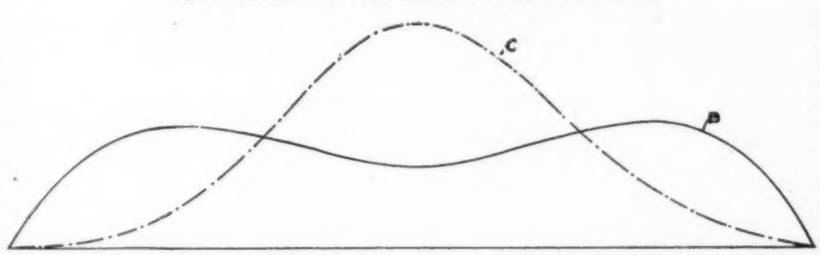


Fig. 3.—Typical curves of sectional area as produced by the waves when the vessel is in a seaway.

Fig. 2 represents the curve of displacement (areas) as those who have read my articles on designing will understand. It represents the volumes of the underbody of the boat laid out in two dimensions instead of three. One unit of area representing 200 pounds' buoyancy. To look at this curve in another way it represents the buoyant effect of the water on the hull; the upward force or buoyancy, of course, being equal to the weight or downward force. The two must, as we have seen, be equal, but the downward and upward force do not have to be the same at every point along the hull as we will see. We might conceive this curve to be made up as shown in Fig. 2, where the length of the arrows represent the upward force of the water. It will be seen that this is greatest amidships, at the place of the largest volume, and diminishes to zero at the ends. Thus we have a hull subjected to a great upward force varying from zero at the two ends to a maximum amidships. We have a supporting force represented by the area shown. If we were to place these two curves one upon the other, we would see that in some places the weight was greater than the buoyancy and in other places the buoyancy was greater than the weight. (Fig. 2 is shown dotted on Fig. 1.)

I have gone into this a little at length and perhaps in a semi-technical way, not that I intend that the reader should follow this method, but only that he may clearly understand the existing conditions.

Let us now turn our attention to the conditions arising when a boat is in a seaway. Suppose that we have a boat among waves of her own length. At times a condition would exist where there were wave crests at the bow and stern and a hollow amidships. Our curve of areas would then take a different appearance as B, Fig. 3, due to the increased displacement amidship, caused by the wave profile. A condition at times would exist with the wave crest amidship and the ends unsupported. The curve of areas would then take on an appearance as C, Fig. 3. The curve of areas in still water is shown in Fig. 2. A little study of these figures will show how the supporting force can take various forms: either similar to these or modifications of them.

If the boat in question was loaded, as shown by Fig. 1 and supported alternately at the bow and stern, and amidships, we see we have a condition worth our attention. Showing these in diagrammatic form by a plank and load, we have conditions somewhat as represented by Fig. 4. In case a, the boat would have a tendency to "sag" amidship, caused by the loss of support amidships. In b, the boat would have a tendency to drop the ends or "hog," caused by the loss of buoyancy at the ends. This is exactly what happens in a boat. If weights are placed in the ends the boat will also have a tendency to "hog" and most boats do "hog," because there are always weights in the ends as anchors, fuel, propellers, etc., and practically no buoyancy, as shown by Fig. 2. When a boat gets into a seaway and the cases mentioned follow one another, the boat is first brought into condition a, Fig. 4, and then condition b,

and she will begin to "work" causing tension and then compression in the members and it is only the strongest and best constructed hull that will withstand these conditions of stresses and still keep tight. The hull will open up along the keel and garboard and the deck-planking and house will open up also. We will go into this more at length later, and so with this brief outline let us turn our attention to the construction of the hull, and the effect of these forces, and the proper way to resist them.

To see the effect of these forces which set up bending, let us consider Fig. 5. Here we have a plank subjected to a set of forces as shown in 4b. The upper part of the plank has a tendency to pull apart while the lower part has a tendency to be forced together. That is, the upper part is in tension while the lower part is in compression. This is shown by the arrows in Fig. 5, the lengths of them showing the relative value of the stresses. The outermost fibers of the plank are under the greatest strain and the strain diminishes as we approach the center and then the direction of the stress changes and acts in the opposite direction, as clearly shown by the arrows. There must be then a line through this plank where there is

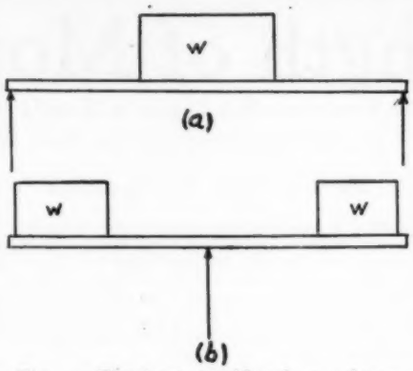


Fig. 4.—The boat considered as a beam loaded at center and at ends.

tension and the lower part into compression, tending to buckle the members. If the boat were sagging these forces would be reversed. We saw, as is only natural, that the greatest stresses came in the material furthest from the neutral axis and that for rigidity material should be placed here to resist these

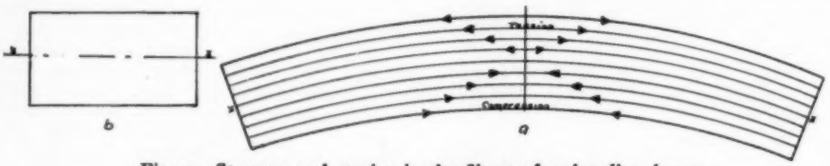


Fig. 5.—Stresses and strains in the fibres of a bending beam.

neither compression nor tension, that is, at the line of change XX. This line where there is no stress acting is called the "neutral axis" and it is at the center of gravity of the cross-section shown, as XX in 5b.

Suppose instead of a plank, as shown in 5b, we had a section as shown in d, Fig. 6 (neutral axis XX); that is, the plank was tipped on edge. By experience we know that this plank would bend less than 5b—in other words, it is more rigid. From 5b we also saw that the greatest strains came on the outer fibers while the strains grew less as we approached the center. In a beam the resistance to bending or the rigidity depends upon the sum of the areas making up the section times the square of their distance from this central axis and the greatest strain comes upon the material farthest from this axis.

Let us turn our attention to Fig. 6: Here we have a number of sections of various shapes, all possessing special advantages. Sections a, b, c and e have great strength, combined with extreme lightness, as the material near the neutral axis where the stresses are small is all cut away. Remember that the value of a flange depends upon the area times the square of its distance from the axis. Thus, in *a* we have an I-beam section with the area placed well out; c shows a bulb tee with a bulb used to take up the strains. In the place of some of these sections we might have a large, built-up section and a beam many feet in length with the same laws holding. The rigidity would thus be greatly increased varying as the square of the distance of the flanges from the axis. This is exactly what happens in a boat. A boat is a built-up girder; the keel and keelson forming the lower flange, the deck and sheer strake forming the upper flange, while the planking forms the connecting web holding the two flanges up to their work.

Let us turn our attention to Fig. 7, which represents the section of a cruising boat, and see how to place our material to the best advantage. We can consider this as a section of a large girder, with XX as the neutral axis at the combined center of the various longitudinal members. Suppose that this boat was brought into a condition of bagging mentioned above. The ends would tend to droop due to the loss of buoyancy at the ends and the upper part of the hull would be brought into stresses. In this case the deck planking and the keel get the greatest strains while the strains diminish as we approach XX (see Fig. 5 a), there being one plank at the axis in which there is no stress whatever.

If we could build a boat with a good strong deck and deep keel the other fore and aft members could be dispensed with as far as

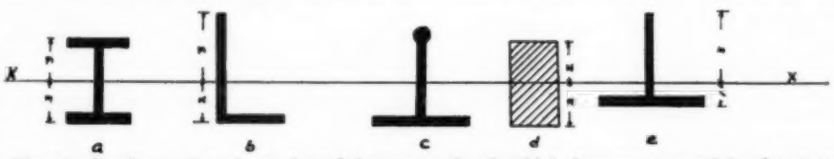


Fig. 6.—Sections of various shaped beams, each of which has some special advantage from the strength standpoint.

longitudinal strength is concerned. For this reason a good oak sheer plank on the deck and one as a top strake on the side help more than all other upper longitudinals put together—they are at the greatest distance from the axis. The various longitudinals are clearly shown in the figure. The shelf shown dotted is often used, although hardly needed in this section. The combined area of the

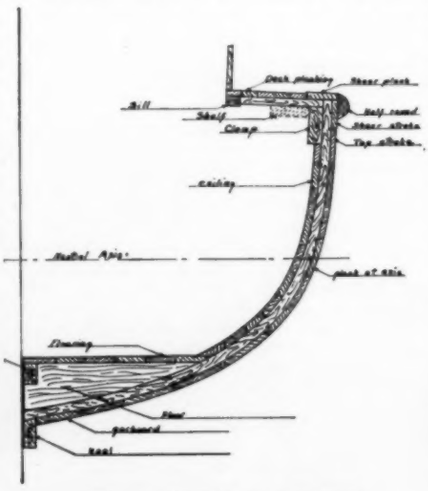


Fig. 7.—Section of a cruiser.

upper longitudinals should be about the same as the lower ones, bearing in mind that the outside planking and the deck are to be considered. In this case where a larger part of the deck is cut away a good substantial sill should be fitted at the cabin sides to compensate for the loss of the deck. The cabin sides and top should not be counted as strength members and should be so constructed that they can take none of the strains set up by bending. This is what is done in steamships where the deck houses are cut up in several parts or fitted with expansion joints so that they can take no load, otherwise, being light members they would rupture.

We might imagine one unfamiliar with these few facts building a boat and in order to make her strong and stiff, putting in a great many longitudinals near the neutral axis, which would add weight but no strength whatever. Of course a deep hull is much stiffer than a shallow one, as it allows the material to be placed further from the axis. If we were to build a shallow hull we would have to put in more material for the same strength for the reason that we can't put it far enough away from the central axis.

Suppose, for instance, in section Fig. 7 we had 17 square inches four feet from XX. Now if we built a hull only two feet deep we would have to have 68 square inches for the same strength $17\times(4)^2=68\times(2)^2$. It is simply the case of section 5 b against 6 d.

Another point worth our serious attention is the location of the neutral axis. This I said was at the combined center of gravity of all the members making up the section. Suppose we built a boat with a strong keel and keelson and a rather light deck. This large area low down would pull the center of gravity of the section down, making the distance to the deck greater than the distance to the keel (as an illustration see Fig. 8 c). It is best to make both keel and deck the same strength and let each do its share of the work as Fig. 6 a and not 6 c.

The length of the boat of course is a very important factor for a long plank, is more easily bent than a short one, consequently the longer the boat the more stiffening is needed.

I do not wish to be understood that any of the motor boats afloat to-day are in danger of breaking apart, for, I think, that this is far from the case; but a poorly constructed boat, where little attention is paid to the stresses set up, will work and strain the members and loosen the fastenings (for wood fastenings at best are poor under tension) and cause leaks in the garboard and deck, especially around deck houses and cabins. In constructing a deck house, don't have any sharp breaks in the construction. Carry the fore and aft members at the side of the cabin well forward and aft of the cabin so that continuity of the hull as a whole will not be broken. A sharp break in a hull caused by the sudden stopping of a strength member is like a beam with a saw cut in it and is very likely to show weakness at this point.

One other point to be taken care of in the construction is to have all the various fore and aft members well secured to each other to make one combined unit. We all know that two planks are on top of the other, supported at the ends and having a central load will bend almost as much as one alone, while if a few nails are driven through them, preventing the two planks from sliding on each other, the combination is a very stiff beam. Keep this in mind and a great deal of strength will be gained.

Other stresses are set up in hulls as rack-

ing. These are of small importance and I will but mention them here. They are caused by the waves acting upon the side of the boat tending to deform the section. For this reason deck beams and beam knees are put in to give the boat sufficient transverse strength. In a boat of any size, bulkheads should be fitted to strengthen the hull transversely. The whole hull should be well fastened together in a transverse direction or else it will begin to work and the bulkheads will begin to creak, making living very uncomfortable. Care should be given to this if future comfort is considered, although the strength will be very little affected.

Stresses of a local nature are set up by the engine in the form of vibrations and in some cases become very annoying. These can be greatly reduced by extending the engine bed over a number of frames forward and aft of the engine, thus distributing the vibrations over a large area. Vibrations of the propeller may also be set up, but the only way to remedy this is to use a large blade area.

From the foregoing brief treatise on the cause and effect of stresses in hulls, any designer or builder with a little thought and study can place his material to the best advantage for strength and lightness. A great many varying conditions and constructions will arise, but the principles outlined above should cover them all if rightly applied. In cabin boats of the ordinary type the strength considerations are very simple; in open boats with large cockpits, especially in racing boats and hydroplanes, where strength combined with great lightness is desired, it needs more attention and the effect of the various stresses should be carefully studied into. The lower portion of the boat is generally strong, but the decks are too often neglected. Quite often the keels are made too strong, bringing great strains in the deck, as I pointed out earlier in the article. A good stiff sheer strake on the deck and side with a stringer fastened securely to them will make a boat that will withstand almost anything. If the designer of a racing boat will make his upper strake and his garboard of tough wood these will help wonderfully in longitudinal strength.

Light canoes when loaded amidships often break if supported on wave crest forward and aft. Several years ago one of the racers at Huntington Bay broke in two while at anchor. There are many cases of boats breaking in two, but there are countless cases of strained and leaky hulls due to poor construction and a lack of knowledge of the strains set up.

Note.—Mr. L. B. Chapman's series of four articles on the designing of motor boats, known as "Preparing for the Design," "Drawing the Lines," "Displacement, Weights and Trim" and "Perfecting the Design," appeared in the February, March, April and May issues of MoToR BoatinG and with the article above form the best treatise on the subject for the amateur that has been published. We heartily recommend them to the amateur who is interested in motor boats and their design.

NEW MOTOR BOAT DESIGNS

A Limousine Runabout.

A Craft Which Shows the Influence of the Motor Car and Which Provides Comfortable Accommodations for Day Trips in Protected Waters.

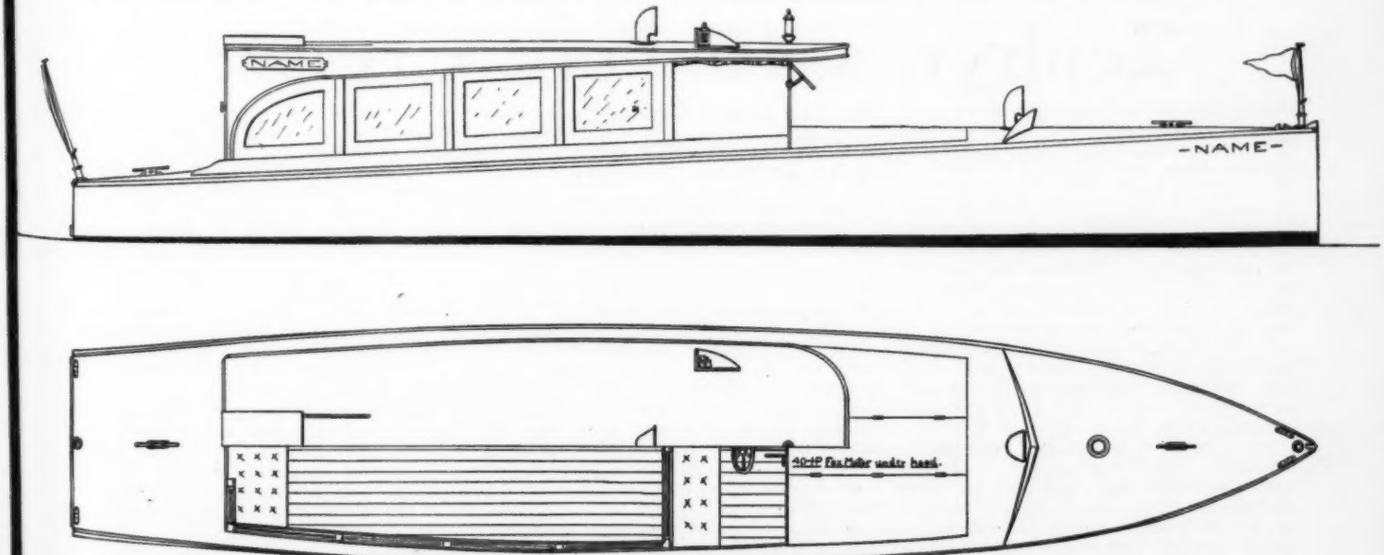
A LIGHT runabout of the automobile type has been designed by Bradford C. Edmands, 98 Lake Ave., Newton Centre, Mass., which is so constructed that it can be converted easily from an open boat into a comfortable craft for a rainy day. The boat is 32 feet over all, with a beam of 6 feet and a draft of 2 feet, and as she is powered with a 40-h.p., 4-cylinder Fox motor she should be capable of considerable speed.

The windows at the sides and ends of the cabin are so constructed as to be let down into pockets, thus making an open boat, except for the light canvas-covered top. The driver is protected in front by a folding glass windshield, and drop side curtains can be fitted for stormy weather. Entrance from the afterdeck into the cabin is by a door and companionway, and the cabin floor has been left clear for wicker chairs, stowage space being provided under the after deck and under the cross seats.

The motor is installed under a folding hood, and the gasoline tank is hung under the forward deck. The construction throughout is light, although sufficiently strong to withstand heavy seas, and the craft is of a model that will not drag when at full speed. A feature of the vessel is the ventilating cowl above the cabin, which overcomes the objection to many boats of this type when they are obliged to be closed in on account of a storm. The windows at the sides are large and, even when closed, allow the occupants of the boat to have an excellent view.

A pleasing effect in this craft is seen in the straight sheer line from stem to stern. With the ordinary type of boat having no standing canopy or cabin, a straight line at this point would doubtless give the craft too low an appearance at the stern, but in this case the lines are considerably improved by the limousine "body" which extends back to a short after deck.

Inside the cabin most of the space is left free for the use of chairs to accommodate the passengers. There is, of course, a seat for the steersman at the forward end, and there is also a seat at the after end of the cabin.



This 32-foot runabout is built upon novel lines and is well constructed for speed and service. She is equipped with 40 h.p. and is particularly adapted to fast day cruising.

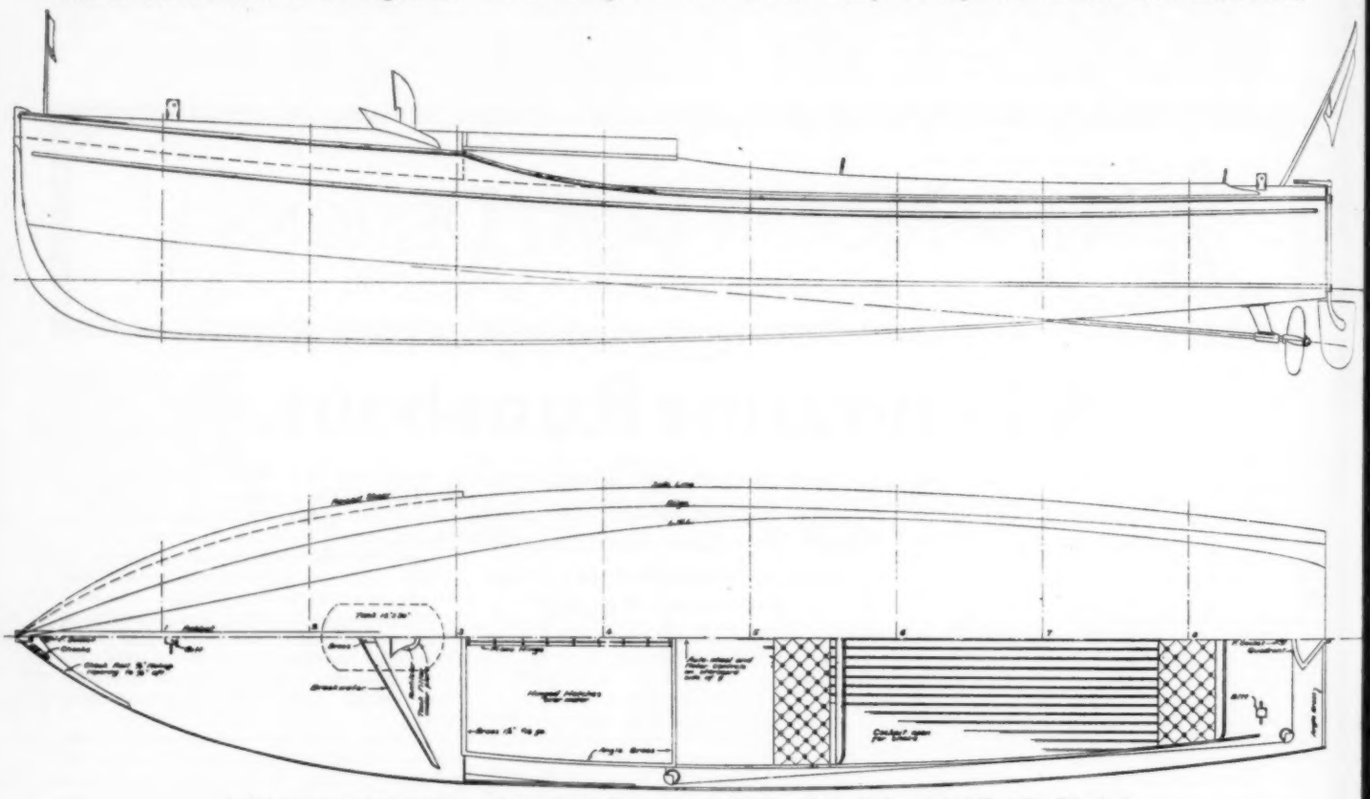
A 27-Foot V-Bottom Runabout.

A Development of the Modern Type of Small Boat Closely Following the General Model of Piute III.

THIS attractive V-bottom runabout has been designed by Wm. H. Hand, Jr., of New Bedford, Mass., for Mr. Wm. Hills, of Auburn, N. Y., for whom the boat is now being built.

In lines, the new boat follows closely the general model of Piute III and is a direct development of the many similar successful boats planned by Mr. Hand. The construction plan provides web frames at indicated station marks with longitudinal stringers, or frames, spaced to divide evenly the distance between chine and keel and between chine and sheer on each frame. The planking is run longitudinally with the seams centered on the longitudinal frames to which both edges of adjoining planks are fastened. This provides a simple and effective construction scheme which eliminates all steam bending and much difficult fitting, and produces a boat which is excellent in all ways. So simple are the details of this type, that the average amateur finds little difficulty in properly building when aided by suitable plans and specifications and provided with the proper material.

In Mr. Hills' boat an 18-25 h.p. Sterling motor will be installed and the speed will be between 18 and 20 miles under favorable conditions. The motor is installed under hinged hatches with control bulkhead aft of motor compartment. The cockpit provides fixed seats for six facing forward, with room between for chairs. The freeboard is high, and the lines are such that the passengers will be carried dry even in rough water at good speed. The dimensions are: length overall, 27 feet; beam, 5 feet 6 inches; draft, extreme, 20 inches.



A V-bottom runabout for an Auburn, N. Y., motor boatman. The design is by Wm. H. Hand, Jr.

Zephyr, a 46-Foot Cruiser.

An Attractive Craft, Embodying Many of the Ideas of a Retired Sea Captain, and Equipped With a Large Auxiliary Rig.

ZEPHYR, whose designs are shown upon the following page, was designed by Swasey, Raymond & Page, Inc., of Boston, this winter for Mr. George C. Foster, of the New York Yacht Club, who is using her for cruising in the vicinity of Buzzards Bay, Vineyard and Nantucket sounds, with moorings at Vineyard Haven. She has as many of the good qualities of the seine boat and life boat as were possible to use and obtain the proportions and arrangements desired. Her lines show by their flare forward and good buoyancy, plenty of sheer, with good depth and deadrise, an overhanging stem and canoe stern that a fine seaboat was desired. Comfort and seaworthiness were, in fact, the first considerations.

The boat, in many essentials, is a notable production, embodying features of design, power installation and arrangement of living quarters that should make the vessel very able and splendidly adapted to her owner's requirements. Strength and reliability have been thoroughly brought out, but the requirements of a fair turn of speed was not overlooked. Mr. Foster, being a retired sea captain, knew what should be in a small cruiser to obtain the most comfort. The deck arrangement is good and allows room for working and going forward and aft without thinking of falling overboard. A high wire rail and bulwarks add security and the cabin trunk and engine hatch give excellent ventilation.

The construction is especially strong, the planking being 1¼-inch yellow pine; the frames being 2¼ x 2¼-inch white oak, with every third frame double-sawed, 3½ x 3½-inch tapered to 2¼ inches, all spaced 12 inches center to center; the keel is 6 inches thick and very deep, with an oak shoe for protection. Yellow pine stringers, oak beams and a teak house and exterior finish are used.

The forward house and the number of low skylights and ventilating hatches compares favorably with many more pretentious yachts, the after deck being protected by an awning which extends out from the forward house.

The arrangements below were worked out according to Mr. Foster's ideas and are undoubtedly the most practical that have been put into a boat for a long time. Under the after part of the cockpit is a large lazarette. Next forward is the engine room which contains a 30-40 h.p., 4-cylinder, 6½ x 8-inch Murray & Tregurtha engine, auxiliary machinery, tool and engine room supplies, and two gasoline tanks of a total capacity of 200 gallons, cylinder oil and kerosene tanks, etc. She has a cruising radius of over 400 miles and is electrically lighted throughout.

This engine room is bulkheaded off from the rest of the boat with gas and water-tight bulkheads, this making it as safe as possible. It is covered by a large engine room hatch with Pullman windows and two cowl ventilators, and is almost as cool as the outside air when the boat is running.

Forward of the engine room is the main cabin which is large and commodious with sleeping accommodations for three. This room has two folding Pullman berths and transoms on the sides and a wide sofa at the after end.

A large clothes closet, a sideboard, etc., give one the impression of going into a house rather than a small yacht.

The main cabin is finished in Colonial architecture and painted a cream white and the doors to galley and owner's toilet have mirrored panels divided into small, individual panes giving a very fine but simple and rich cabin.

Next forward on the port side is the owner's toilet finished in white tile with all the usual lockers and fixtures. A passage on the starboard side with refrigerator and food locker on the outside leads to the galley, which is particularly well found and has a stove, sink, dresser and lockers on the port side, with a transom and pipe berth on the starboard side. A 60-gallon water tank is under the galley floor. Forward of this is the crew's toilet room and clothes locker, a collision bulkhead and the forepeak. Access to the deck is provided for in all rooms and especial attention is given to ventilation.

The deck arrangement is very simple and practical. Aft is a large cockpit sunk about one foot, which, with the high wire rail gives a sense of security not obtained on a small flush-decked cruiser. In the forward end of this cockpit is the engine hatch with a passage on either side, and on top of the forward end of the engine hatch is a wide deck seat with locker under. Next is the navigating bridge which extends to the sides of the boat, so the helmsman may walk to the side when docking or picking up a mooring.

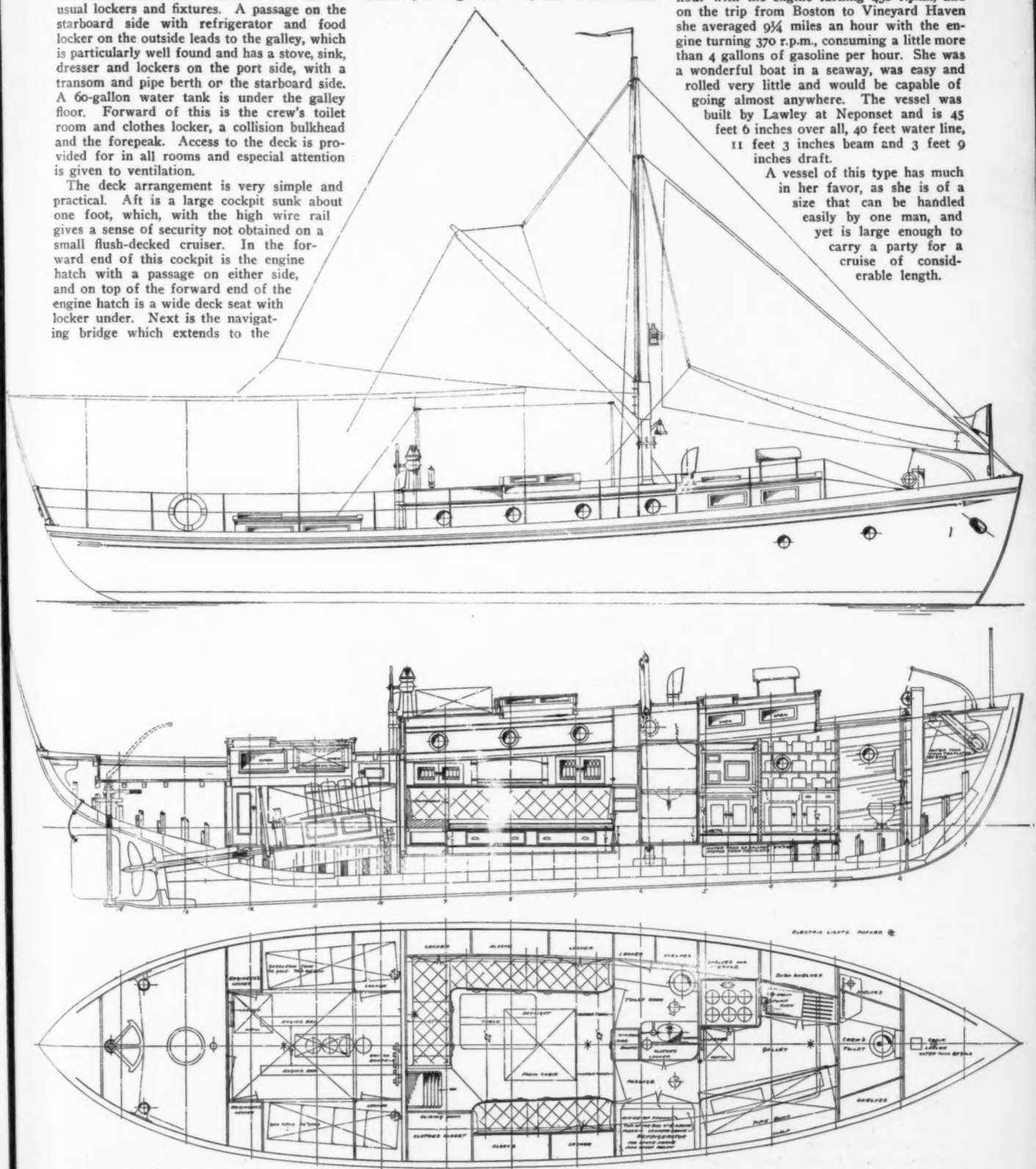
Reverse and throttle controls are installed so the helmsman may operate engine. Bells are also installed forward for use when the engine is operated from the engine room.

Forward of the engine room is the cabin trunk with deck passage on either side and a lot of room on the forward deck for handling anchors, a large windlass, etc. Boat chocks are provided for carrying a tender on the port side of house and davits for hanging overboard. Hatches and cowls are provided for ventilation and access to below decks.

This vessel carries an auxiliary rig, consisting of a jib and mainsail, for use in fair winds or emergency which also adds to her appearance and is one more feature to increase her seaworthiness.

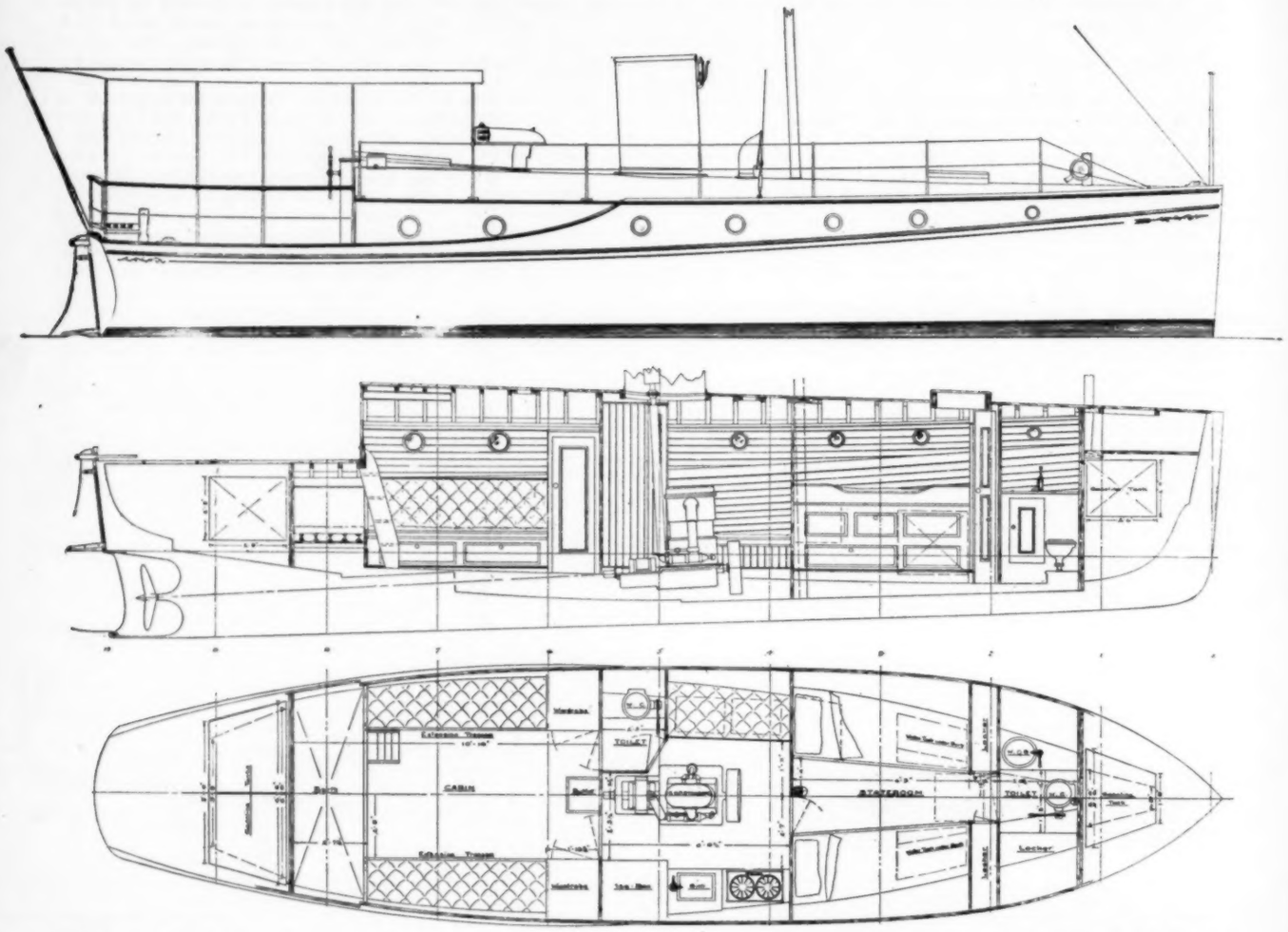
On her trial trip she made 10½ miles an hour with the engine turning 450 r.p.m., and on the trip from Boston to Vineyard Haven she averaged 9¼ miles an hour with the engine turning 370 r.p.m., consuming a little more than 4 gallons of gasoline per hour. She was a wonderful boat in a seaway, was easy and rolled very little and would be capable of going almost anywhere. The vessel was built by Lawley at Neponset and is 45 feet 6 inches over all, 40 feet water line, 11 feet 3 inches beam and 3 feet 9 inches draft.

A vessel of this type has much in her favor, as she is of a size that can be handled easily by one man, and yet is large enough to carry a party for a cruise of considerable length.



Mr. Foster's cruiser is a 46-footer with all the features necessary for sea work. She is driven by a 30-40 h.p. Murray & Tregurtha motor.

Dream, the Bermuda Race Winner,



Dream, the winner of the Bermuda race, is 40 feet in length over all and is equipped with a 2-cylinder Standard motor of 18.85 h.p. She was designed by Bowes & Mower and represented the Yachtsmen's Club of Philadelphia. A full description of this race will be found beginning page 9.

Katherine, a 31-Foot Runabout.

A Popular Type of Fast Craft for Use Upon An Inland Lake, Combining Moderate Power with Good Speed and Large Carrying Capacity.

THE runabout whose designs are shown upon the opposite page is one of the latest productions from the office of J. Murray Watts, of Philadelphia, and has been built for William P. Jackson, of Salisbury, Md. The boat is 31 feet long and is built with the motor well forward and covered by a hinged turtle deck. The motor compartment is separated from the after portion of the boat by a bulkhead, so that practically all of the noise is therefore confined to the engine compartment.

The entire cockpit is left free for wicker chairs, the only seat built in being a small one provided at the stern with a locker under. The steering wheel and control levers are at the center of the bulkhead just aft of the motor compartment, so that the boat will have a good trim when she is being operated with no passengers aboard. The starting handle is also extended through this bulkhead and the motor controls, which are of the automobile type, are upon the steering wheel.

The boat was built by the Salisbury Marine Construction Company, Salisbury, Md., and was designed for use merely as a comfortable runabout, although upon her trials she showed a speed that spoke well for her design. She is equipped with an 18-25 h.p. Sterling motor and, although her guaranteed speed was 12 m.p.h., she has proved her ability to travel at 15 m.p.h. with 12 persons aboard.

The motor compartment is ventilated by a cowl set in the forward deck and the motor is set at such an angle that a straight-line drive is secured without the use of a universal joint. A standing canopy is placed over the cockpit, and side curtains can be used in case of stormy weather.

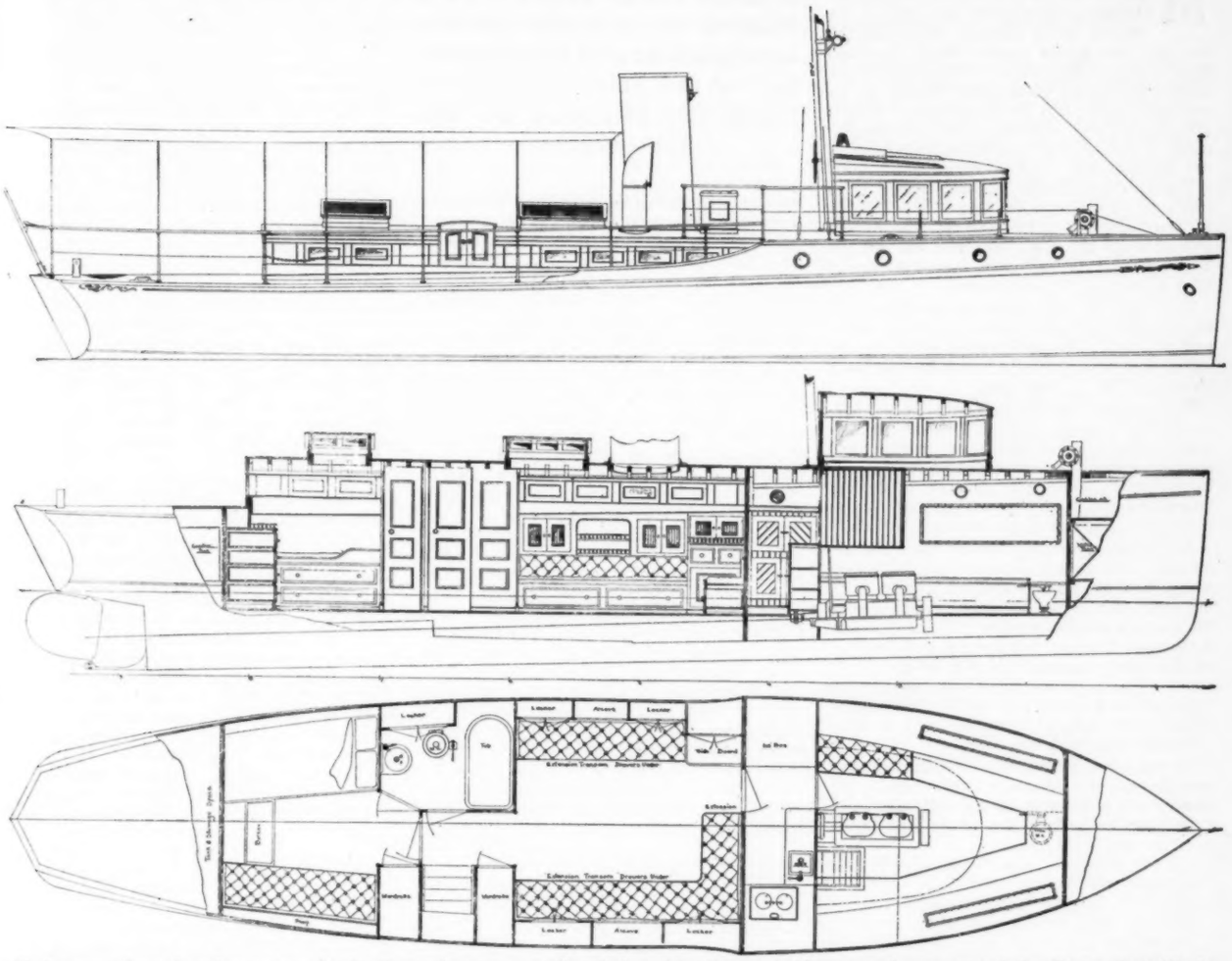
Moderate-sized craft of this type have lately become exceedingly popular upon the lakes, rivers and other inland waterways of this country where a fairly speedy easily handled runabout is required. Especially is this true at summer resorts where a majority of the population have cottages upon islands and the only method of communication with each other is by boat. When the gasoline engine first came into use and it was discovered that it could be installed in an ordinary skiff, these converted types were the favorite. More speed and comfort was demanded, however, and the automobile type of boat with fair speed and ease of control has come into a deserved position of popularity.

Katherine has the modified V-transom stern which has proved its worth, and although the freeboard is not high she should prove a very dry boat. There is sufficient flare at the bow to throw the water away from the sides of the boat, and as her design will prevent squatting almost entirely, the lower freeboard at the stern will prove of no disadvantage.

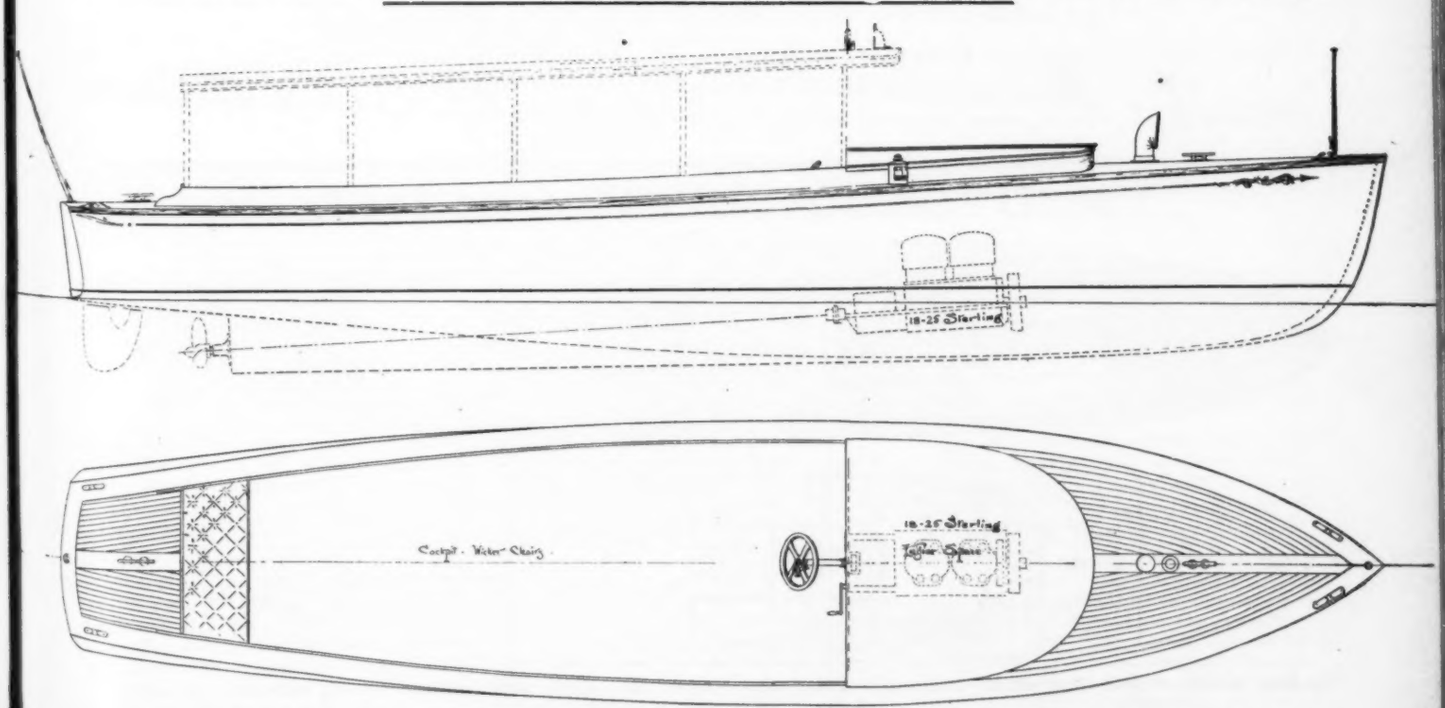
As the gasoline is carried in a tank slung under the forward deck it can be fed by gravity and although this brings the weight rather far forward the passengers in the cockpit will effectually counteract it. The tank, however, occupies only a small amount of the space available under the forward deck and there is sufficient room for the stowage also of lamps, anchors, etc., or whatever else may be needed for ordinary running conditions.

Mr. Jackson plans to use the boat at his country place on Loon Lake in the Adirondacks.

and Kathemma, the Other Entrant.



Kathemma, the only other entrant in the Bermuda race, was also designed by Bowes & Mower and represented the Ocean Gate Yacht Club of Philadelphia. She is 51 feet over all and is equipped with a 4-cylinder Buffalo motor developing 37.7 h.p. A heavy storm loosened her reserve gasoline tanks and much valuable time was lost in repairs. Her deck house and stack were removed for the race.



J. Murray Watts' Katherine is of the type that can be enclosed in stormy weather and should prove a very serviceable craft.

A 110-Foot Great Lakes Cruiser.

A Large Power Vessel With a Number of Novelties in Her Arrangement and Equipment. One of the Most Satisfactory Types Yet Designed for the 1913 Season.

MORRIS M. WHITAKER, Nyack-on-Hudson, New York, has recently designed for a Chicago yachtsman the 110-foot twin screw cruiser whose plans are shown below. This vessel is to be built by the Matthews Boat Company, Port Clinton, O., for the 1913 service and she is worthy of special attention both on account of her size and because of the unusual conveniences included in her arrangement.

The extreme breadth of this cruiser is 18 feet and her extreme draft is 6 feet. She is to be equipped with two 150-175 h.p. motors, and although the make of motor has not yet been definitely decided upon, the vessel should have a very fair cruising speed.

The hull is of extra heavy construction with an oak keel and yellow pine stringers, clamps and planking. The decks are to be finished in white pine and the deck erections and deck houses will be of mahogany.

The quarters for the crew are located forward of the motor room and consist of separate staterooms for the captain, engineer and steward, with a mess room and berths for four in the crew. The crew's toilet is in the extreme bow and there is plenty of locker space throughout the crew's quarters.

The motor room is divided from the remainder of the vessel by watertight bulkheads and is equipped with a complete electric lighting plant with storage batteries in addition to the two six-cylinder motors. There is a pipe berth upon the port side for use by a member of the crew if necessary. Aft of the motor room and located amidships are seven fuel tanks, giving a capacity of nearly 2,000 gallons. Upon either side of these tanks is a toilet communicating with the staterooms aft.

The two large staterooms are fully equipped and the unusual feature of the craft is the location of a toilet in connection with each room, with hot and cold running water. Each stateroom contains two berths in addition to a wide seat and has both a wardrobe and a bureau.

The main saloon is provided with a folding-table and two transom berths, which may be curtained off for use when there is a large party aboard. From the saloon a passage leads to the companionway opening to the starboard deck, the passage leading to the owner's stateroom in the after part of the vessel. This room is very comfortably fitted and contains two berths, lockers, a bureau and running water. Opening from the passage upon the port side of the vessel and within easy communication from the owner's stateroom is a bath. The interior finish of the owner's quarters is to be white enamel with mahogany trim.

The dining saloon is in the forward deck house, which also covers the galley so that meals can be served quickly. The dining saloon contains a large round extension table, a buffet and coat lockers. The galley is completely equipped and communicates through a companionway with the quarters below.

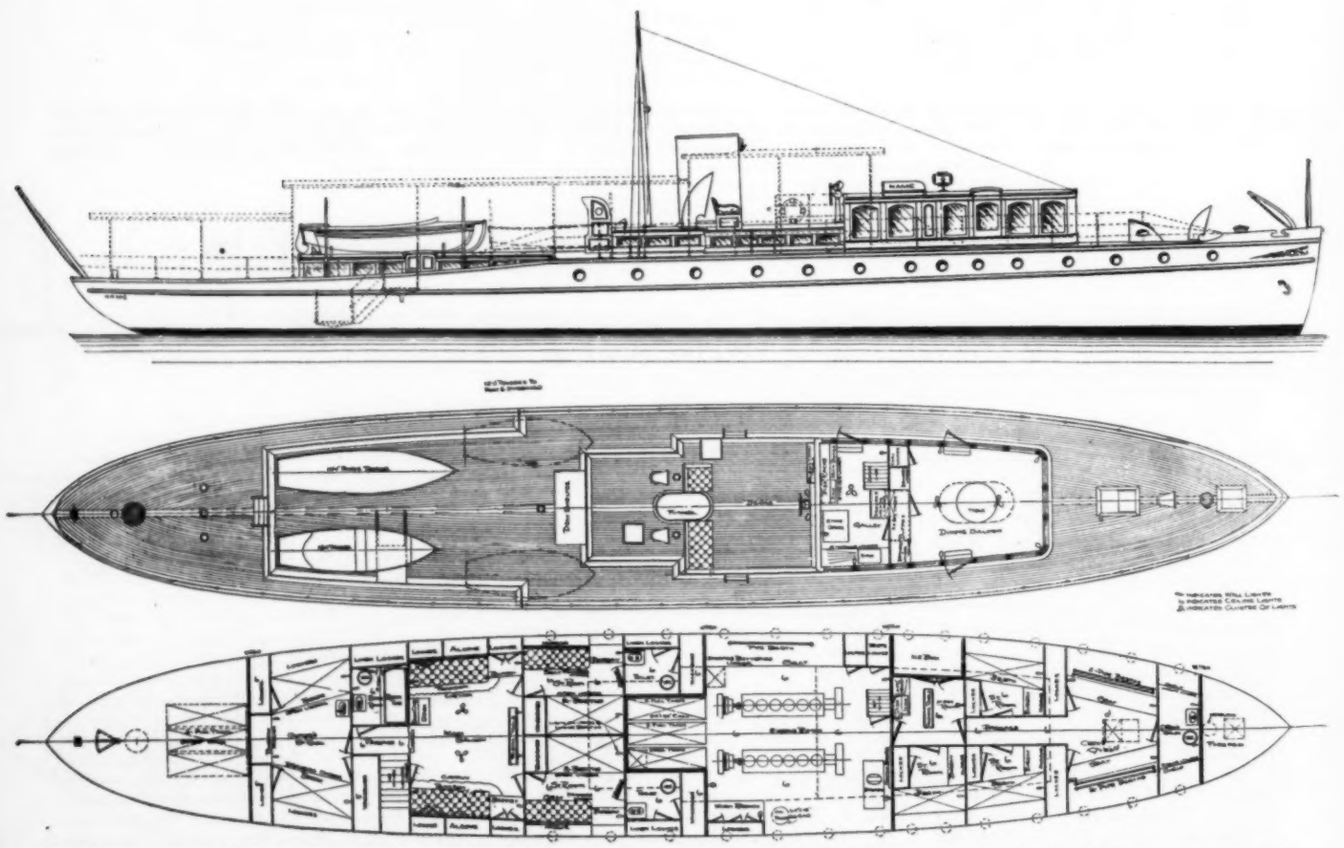
Aft of the dining saloon is a large bridge so arranged that an unobstructed view can be obtained upon all sides. A comfortable seat is also arranged upon either side of the stack at the after end of the bridge. An innovation in the construction is seen aft of the stack also where there is arranged a deck shelter occupied by a seat which is thoroughly protected at the back and sides from the weather.

The fresh-water capacity of this craft will be 350 gallons and arrangements have been made in the design whereby the tanks can be filled with fresh water directly through the bottom of the hull when the vessel is out in the Lakes, so that a supply may be taken aboard before entering port or at any other time when clean water is available. The water is pumped through the main tanks in the hold from a gravity tank on deck. A complete equipment of fire and bilge pumps will be installed and the designs call for four life boats and tenders consisting of two 12-foot and one 14-foot rowing dinghy and a 16-foot power dinghy.

A single signal mast amidships adds to the appearance of the craft. She is scarcely built to carry two masts although vessels of somewhat the same general appearance have sometimes been so equipped. The height of the deck house forward and the rather high midship section of the vessel make the single mast vastly preferable, however, and there seems to be nothing to criticise as to her general appearance.

The quarters below deck are amply lighted and ventilated by numerous ports in addition to the skylights and the Pullman windows in the sides of the trunk cabin, and the vessel throughout is light and cool for hot-weather cruising. The crew's quarters are particularly well laid out, an important feature which is sometimes overlooked in the construction of the most costly yachts, and a never-ending amount of dissatisfaction is the inevitable result. Although in this instance the accommodations for the crew are placed in the forecastle, as usual, there is more than the average amount of space given over to them and they are exceptionally well planned.

The vessel will be equipped with heavy ground tackle and should be very seaworthy. Her owner expects to use her upon the Great Lakes.



The large amount of deck space and the comfortable arrangements below, with running water and toilet for each stateroom are features of Mr. Whitaker's latest design.

A Wireless Equipped Lifeboat.

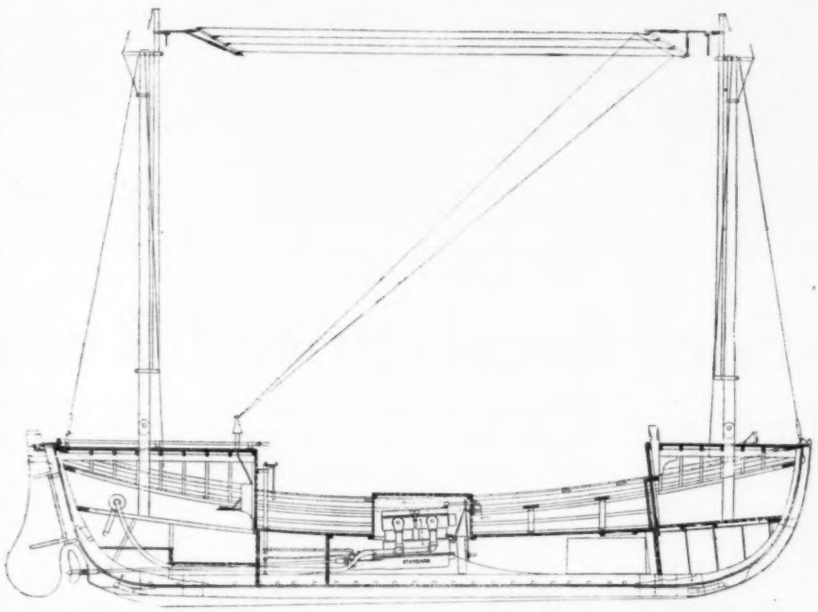
A Non-Sinkable Craft Which Has Been Developed Through The Recognized Necessity for Additional Safety at Sea. It is Equipped With a Heavy-Duty Standard Motor and Is Designed to Live Through the Worst Storms.

THE small power boat, strange to say, has been largely ignored by steamship owners, in the face of its remarkable development by manufacturers, and notwithstanding the fact that both in the United States and in Europe it has reached a high state of perfection. American marine engines are bought in large quantities today in every part of the world and the navies of the world use power boats very largely. The gas engine for automobile and motor boat use is one of the engineering triumphs of the present age. Yet few passenger steamers are equipped with even one power boat for use in times of great danger or sudden emergency.

Any modern cruiser or battleship is equipped with a large number of motor boats, and they are invaluable to these vessels. A very potent reason for the mercantile marine to make greater use of the motor boat lies in the fact that under modern conditions it is wellnigh impossible to man the lifeboats of a huge passenger steamer properly. A handful of picked men would be of more use, were motor boats carried, than many inexperienced oarsmen. Furthermore, owing to the introduction of the automobile and the large number of power boats used for pleasure, on any passenger steamer a considerable number of people who are expert in handling a gas engine could be found.

The life-saving service in the United States and in many foreign countries has very generally adopted the power lifeboat. The same features which make it far superior to the oar-propelled boat in this service should cause one or more to be carried on all large vesels. In a heavy seaway the ordinary lifeboat is in constant danger of sinking because of the inability of the oarsmen to keep the boat from being thrown broadside into the trough of the seas.

Such a power lifeboat as shown in the accompanying plans can be kept by one man head-on to the waves and will also tow a number of lifeboats astern. This power lifeboat is non-sinkable and self-righting. It is designed to live through the worst storms. Its heavy-duty Standard engine has been designed and developed most fully to meet the conditions. Unusual power is obtained at a low rotative speed so that a large slow-turning propeller is swung, giving the boat great towing capacity. The engine installed shows the center of gravity to be unusually low. This feature is important in a small boat as all weights are kept as low as possible for the greatest stability. It will be seen that the engine is housed in a water-tight compartment and that all controls are carried outside so that the engine may be started, stopped and reversed without opening this compartment. Complete control of the boat is had at the tiller as the controls for the throttle and the reverse gear and clutch are carried aft to where the steersman stands. Water, gasoline and other supplies may be carried in the fore and aft water-tight bulkheads below the floor. The boat's masts when extended are 35 feet high. These telescope and fold down. This operation is performed very simply and easily. Each is raised by a single halyard, which in raising the mast also tightens the stays.



A non-sinkable and self-righting power lifeboat equipped with wireless apparatus for sending 75 miles and receiving from 500 to 800 miles.

Perhaps what will seem most novel in this boat is her wireless equipment. Similar apparatus, however, has been installed in small boats before this. The Austrian Lloyd Steam Navigation Company equipped a lifeboat with a Standard engine and wireless equipment two years ago, just after the accident to the Republic and Florida. The boat here shown with an aerial of about 35 feet and spread of about 25 feet has a sending radius of about 75 miles. Messages could be received from a distance of 500 to 800 miles.

One can readily see the possibilities in a boat so equipped. One or two such boats, besides picking up those in the water and seeing that all lifeboats were loaded, could keep a large fleet together. Each could tow six lifeboats at a speed of three to four miles per hour.

A Rough Weather Cruiser.

One of the Latest Racine Boats Designed as a Sea-going Cruiser with Plenty of Room Below Decks.

THE plans on the following page show a 40-foot rough weather sea-going cruiser, designed by the Racine Boat Company, of Racine, Wisconsin. The principal dimensions are: length over all, 40 feet; extreme beam, 9 feet; extreme draught, 3 feet.

In designing this craft due consideration has been given to its sea-going quality and ventilating system, there being two Crown ventilators forward and a large ventilating system over the engine room, also a sky-light over the main saloon.

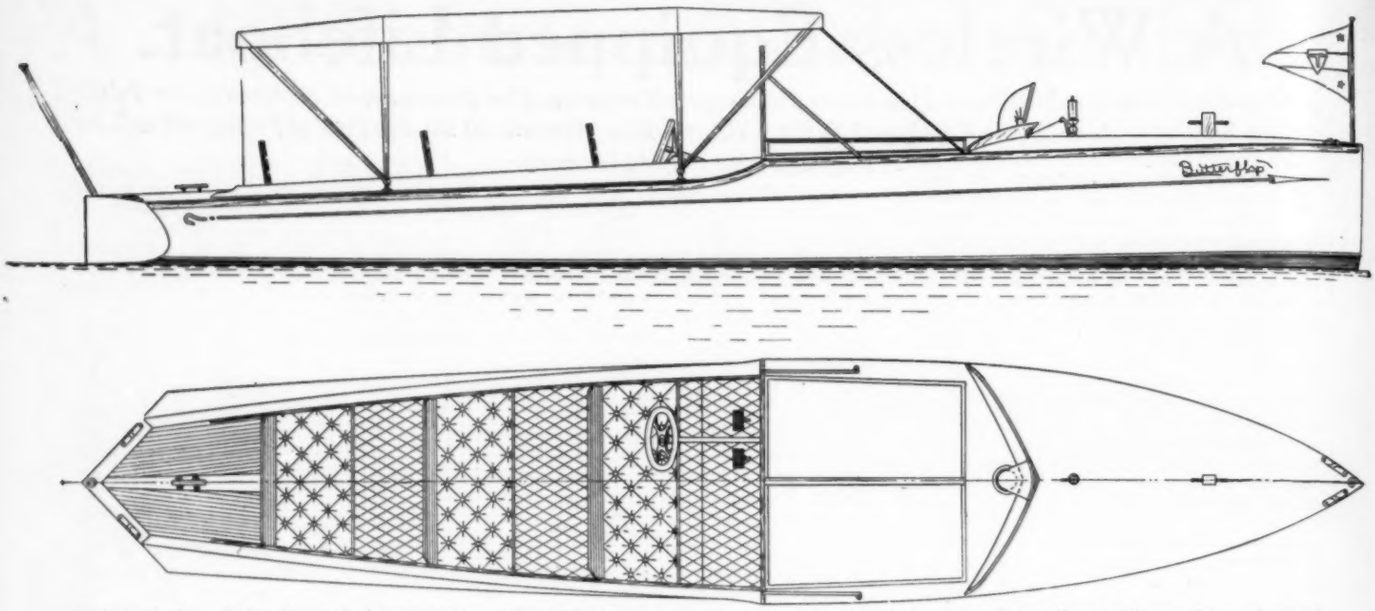
The general interior arrangement is as shown, starting forward with the anchor chain locker and large gasoline tank. Aft of this compartment is the toilet room with a gasoline tank on each side. Aft of the toilet room is the main saloon, fitted with wide seats at the after part, and wide bunks in the forward part. The forward bunks are elevated 2 feet 6 inches from the floor, giving a wide berth and ample locker space below. There is also a small office desk in the after part and table with drop-leaves and shelves below.

Aft of this compartment is the engine room, fitted with engineer's bunk on the starboard side, and galley on the port side, with companionway stairs leading to cockpit. The cockpit is self-bailing, the floor being 10 inches above the waterline, and bailed through large lead scuppers.

The engine is a 40 h.p. 4-cylinder 4-cycle heavy-duty type controlled from the bridge in the cockpit. The steering wheel is also located at this point. The boat is fully equipped with electric lights, the storage battery and dynamo being of the Dayton type.

A 10-foot dinghy swung on davits is carried on the cabin roof, and suitable anchor and cable and davits, flag-poles and sockets, military mast, air whistle and sailing lights fitted with screens are provided. The cushions are pantasote, filled with kappack and are made about 4 inches thick, and the floors are covered with linoleum.

The entire framework is made from selected straight-grain white oak, with planking of white oak and cypress, raised-deck sides and cabin sides of white oak; cabin-roof carlins of white oak, sawed to the proper crown covered with matched cypress and canvas and finished with half-round oak moulding. The interior of cabin is panelled throughout. All hardware and portlights are of solid bronze, the latter being fitted with heavy glass and rubber gaskets. The toilet room is fitted with an improved marine closet and lavatory. Gasoline tank capacity is 200 gallons, and the fresh-water tank is 100-gallon capacity.



This 22-foot craft has been designed with a view toward dryness and comfort in a choppy sea and her lines will permit good speed with a comparatively small power plant.

A 22-Foot Semi-Speed Runabout.

A Boat of the Automobile Type Which Will Give Good Speed With Moderate Power, and Showing an Unusual Seating Arrangement

THE drawings shown above illustrate a 22-foot semi-speed runabout, which is designed by Glenville S. Tremaine, Bath, Maine, and which is now under construction. This boat has a beam of 4 feet 2 inches, and her lines are very fine and clean-cut, with flaring sections forward. The lines are run flat aft, a combination which gives an unusually dry boat in a choppy sea, and which should give excellent speed with a moderate power equipment.

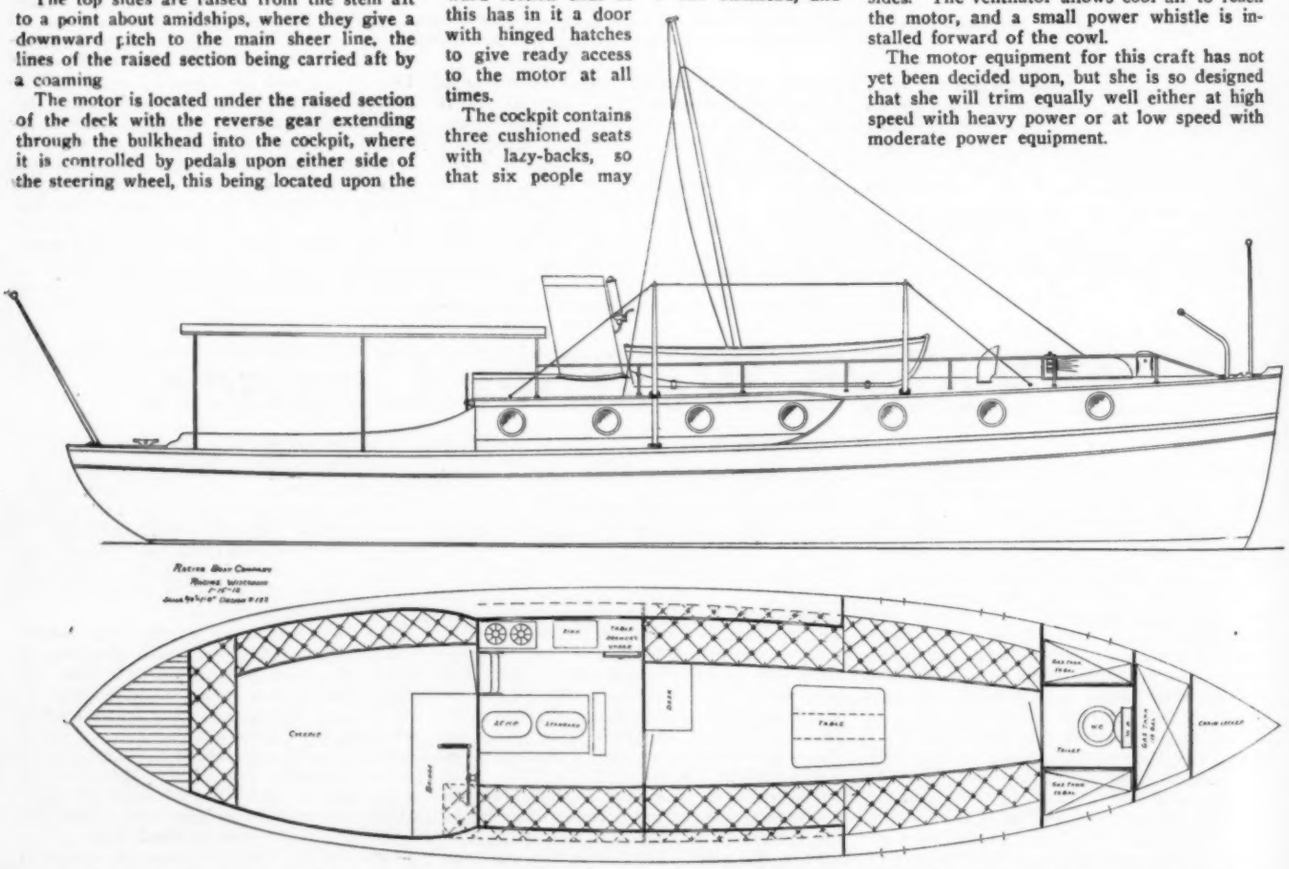
The top sides are raised from the stem aft to a point about amidships, where they give a downward pitch to the main sheer line, the lines of the raised section being carried aft by a coaming

The motor is located under the raised section of the deck with the reverse gear extending through the bulkhead into the cockpit, where it is controlled by pedals upon either side of the steering wheel, this being located upon the port side of the boat. This raised deck forward section ends in a full bulkhead, and this has in it a door with hinged hatches to give ready access to the motor at all times.

The cockpit contains three cushioned seats with lazy-backs, so that six people may be seated comfortably. The portable glass windshield forward of the wheel adds materially to the comfort of the passengers, while the automobile top, which is equipped with side curtains, can be used to enclose the cockpit entirely when necessary.

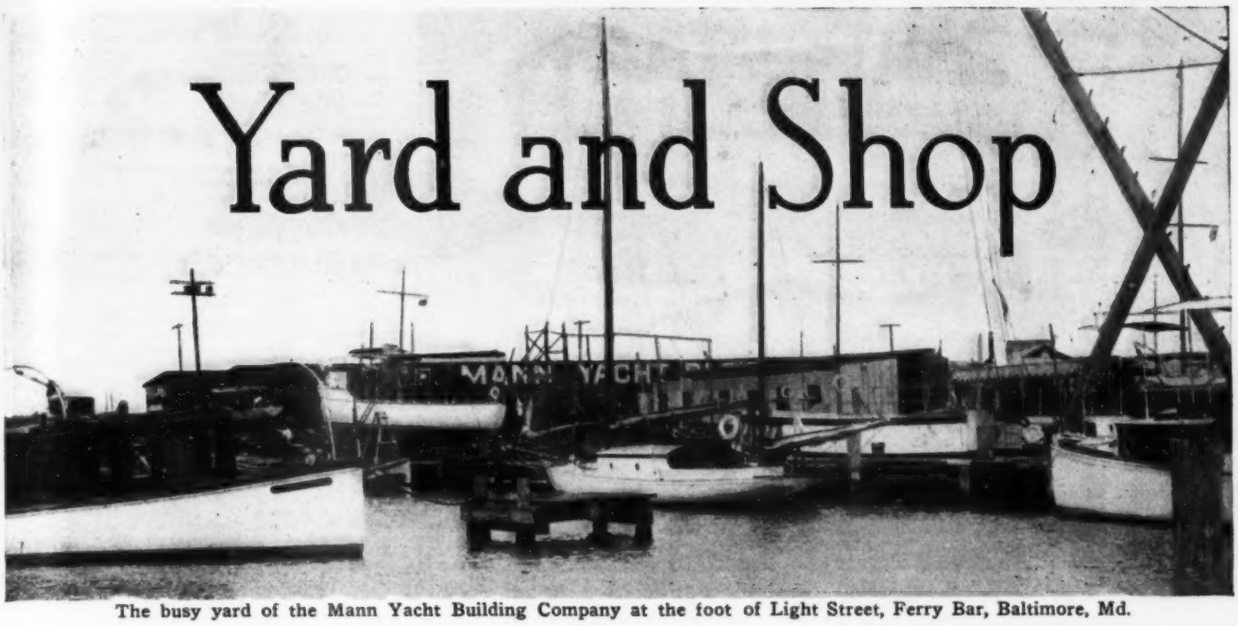
The bulkhead seats, coaming, cockpit, panelling, transoms, mouldings, etc., are of bright finished mahogany, which with a gold beading forming a pleasing contrast to the white topsides. The ventilator allows cool air to reach the motor, and a small power whistle is installed forward of the cowl.

The motor equipment for this craft has not yet been decided upon, but she is so designed that she will trim equally well either at high speed with heavy power or at low speed with moderate power equipment.



The Racine cruiser described upon the preceding page. She is 40 feet over all, and particular attention has been given to her sea-going qualities.

Yard and Shop



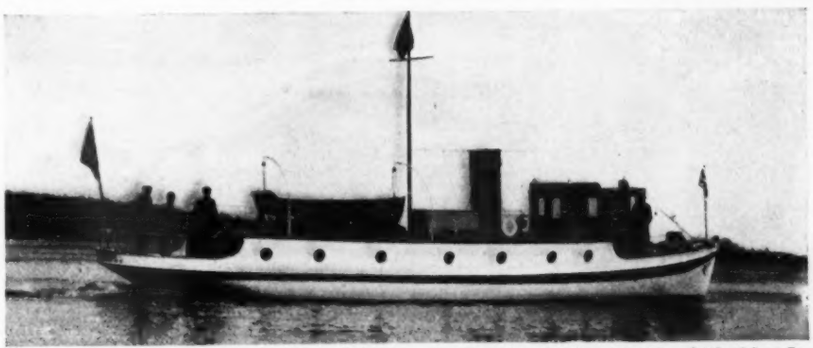
The busy yard of the Mann Yacht Building Company at the foot of Light Street, Ferry Bar, Baltimore, Md.

Fulton Agency Established in London.

The Fulton Mfg. Company of Erie, Pa., recently completed arrangements with the Ailsa Craig Motor Company, Ltd., Strand-on-Green, Chiswick, London, W., England, for handling their well known two-cycle three-port self-sparking engines. The new agents are well known through the British Isles and are very advantageously situated on the bank of the Thames river, where they have a large boat shop and plant for the manufacture of Ailsa Craig motors and boats. They are members of the Society of Motor Manufacturers and Traders and are on the list of contractors to the Admiralty, War Office, India Office, Crown Agents for the Colonies and foreign governments. A full stock of Fulton engines will be kept on hand, which can be inspected by prospective purchasers at all times, and from which immediate delivery can be made.

A Motor Boat for Missionary Work.

The 60-foot motor boat Sunbeam, which is pictured on this page, was designed and built by the Camden Anchor - Rockland Machine Company, Camden, Me., for the Maine Sea Coast Missionary Society of Bar Harbor. The society is known along the entire New England coast and many of the New York summer residents stand behind it in furthering its work. As a matter of fact, Sunbeam was presented to the organization by Mrs. Peter Kennedy, of New York City. The Maine Sea Coast Missionary Society was formed in 1905 and since that time has accomplished a great deal of valuable and efficient work in the way of visiting the isolated islands and settlements along the coast, establishing and helping to build schools and churches and in general looking after the wants of the people. A large portion of the credit for the splendid results obtained by the society is due to the Rev. A. P. McDonald of Bar Harbor, who has charge of the society's fleet. The first boat was the 38-foot auxiliary sloop Hope. This boat soon became familiar to the summer residents along the coast and in 1907, Mackey Smith of New York presented to the organization the 45-foot motor boat Morning Star, which has been used up to the present. The Morning Star, however, is not large enough for winter cruising and last year proved unable to do the work alone, so Sunbeam was built to take up the burden. As Sunbeam is intended for cruising along the coast in heavy weather the year round, she is very strongly built and has lines designed to give great seaworthiness. She has a beam of 14 ft. and a freeboard forward of 6 ft. Her main cabin is 13 ft. long and has 6 ft. 3 in. headroom. Her framing is of Maine oak, with the clamps, bilge stringers and planking of yellow pine. Her deck is white pine covered with canvas and she is ceiled throughout with cypress. In order to protect her from the ice she has a band of copper running all the way around her and extending 8 inches both above and below the waterline. Her gasoline tanks are unusually large and are set in pans arranged to drain overboard in case of leaks. She is powered with two 35 h.p. Standard motors. Her captain and pilot is the Rev. A. P. McDonald and her sailing master is Nathan Rozier of Frenchboro. Roy Stuart of Corea is engineer and cook and has been employed by the society in that capacity for the past four years. The Sunbeam cost complete approximately $7,500.



Sunbeam, a missionary motor boat built by the Camden Anchor-Rockland Machine Co. for service on the Maine coast. She has two 35-horse Standards.

Table No 1.

ENGINEERING LABORATORY — PURDUE UNIVERSITY

RUNNING LOG

Original Test of a Gray Motor 2 Cylinder 12 N.P. Model S.
Made Mar 2 to June - 1909.

Schebler Carburetor

R.P.M.	Brake H.P.	Brake lbs. per H.P.
1152	13.39	1.80
1111	13.53	1.70
1084	14.39	1.70
1071	14.74	1.630
1040	14.70	1.7
996	14.07	1.775
950	14.34	1.86
909	14.11	1.90

For Test Test, + 14¾ H.P. at 1040 R.P.M., the gasoline consumption was at a rate of 1.85 lbs. per H.P. with Schebler Carburetor.

Results of the test of a Gray engine at Purdue University.

An Interesting Gray Engine Test.

During the early part of 1909, the Gray Motor Company of Detroit loaned to Purdue University a 12 h.p. two-cylinder Gray engine, which was to be used by the students for making various tests to ascertain the power, economy, etc., of the machine. In the first series of tests, the engine equipped with a standard Schebler carbureter delivered an actual horsepower of 14.75 at 1,040 r.p.m., with a gasoline consumption of 1.15 pints per horsepower. The engine was then taken to the coast of Maine and installed in a 25-foot motor boat. After it had been in service three summers, it was taken out of the boat and sent back to Purdue, where it was thoroughly overhauled, the only repairs necessary being a new crankshaft and shaft bearing. The motor was otherwise the same machine that had been tested three years before except that a Krice carbureter had been substituted for the Schebler. A second series of tests was then given the engine. At 80 lbs. brake load, an average r.p.m. of 1,080 was obtained, the engine delivery 18.83 h.p. On this page are given reproductions of the tables showing the detailed results of these interesting tests.

1913 Chicago Show Planned.

At the annual meeting of the National Association of Engine and Boat Manufacturers, held on February 23rd, the subject of a motor boat show in Chicago in 1913 was discussed and the executive committee was authorized to look into the matter and ascertain whether or not suitable arrangements could be made to hold such a show. After some correspondence with Chicago on the subject, it was agreed that a motor boat show could be successfully held in the Coliseum provided the project received the proper support from the members of the association. If it is decided to hold this exhibition, it will in all probability follow the 1913 show in New York.

Toss of a Coin Decides Winner of Valuable Prize.

During the recent regatta of the Inter-Lake Yachting Association at Put-in-Bay, the motor boat donated as a prize by the Motor Boat and Supply Company of Cleveland, Ohio, was one of the important centers of interest. The boat was to be the property of the person who could overtake and capture her after she had been started off with her wheel lashed and no one on board, according to the original plan. But as the handicaps could not be figured so as to have a race that would be fair to all the contestants, it was agreed that any member of a club belonging to the I. L. Y. A. should have a chance to guess by ballot as to the time it would take for the boat to cover a measured course of ten miles. The suggestion was made by Mr. Richardson, of Toledo and approved by Mr. Barnes of the Motor Boat & Supply Company. There was much excitement when it was announced that two of the contestants had guessed the same running time of 1 hour and 53 minutes. It was then necessary to toss a coin to decide the victor, and Ray Young of the Cleveland Powerboat Club won the valuable prize and brought the boat back to Cleveland.

Michigan Wheel Gets New Address Without Moving.

The Michigan Wheel Company of Grand Rapids,

Table No 2.

ENGINEERING LABORATORY — PURDUE UNIVERSITY

RUNNING LOG

Gray Motor 2 Cylinder 12 N.P. Model S.

Krice Carburetor

	Brake Load in lbs.	R.P.M.	B.H.P.
Short series	35	1135	14.10
	50	1040	19.70
	57½	1000	18.00
	63½	1060	16.10
	67½	1040	17.50
	70	1030	17.00
Second series	30	1093	
	50	1057	
	80	1084	
	90	1074	
Average	80	1082	18.82
Third series	50	1107	
	80	1074	
	90	1041	
Average	80	1080	18.83

Another test of the same Gray taken after three seasons' service.

A Toppan 25-footer built for the American Museum of Natural History. She will be used in Arctic waters.

Mich., which is known chiefly as the manufacturer of Michigan propeller wheels, although it produces a large line of motor boat supplies as well, has accomplished the rather unusual feat of obtaining a new address, although still in the same old spot. As it happens, however, the authorities of Grand Rapids recently changed the names of some of the streets and the numbers of the buildings so that although the Michigan Wheel Company is in its old location, it must in the future be addressed at 1115 Monroe Avenue.

A Handsome Cruiser from the South.

The picture of Augusta on the opposite page shows a handsome motor boat designed by Gielow & Orr for C. G. Pillots and built by the Nelson Ship Yard and Construction Company, Harrisburg, Tex. She is framed with natural crook mulberry and Texas white oak and has heavy mulberry floors, red cypress planking and deck houses of teak with figured mahogany for the inside finish. All her fastenings are either bronze or copper. She is driven by two 100 h.p. Standard motors and has a 12 h.p. auxiliary power plant. Her windlass is operated by an electric motor and electricity also supplies the means for heating, cooking and lighting. She is equipped with a local telephone throughout. Her owner expects to make extended cruises to such places as New York, Palm Beach, Cuba, Mexico and Panama and when the Panama Canal is completed, he will probably take her through and up to Los Angeles and San Francisco for the Panama Exhibition. The Augusta has a speed of about 15 miles an hour.

A Motor Boat for Arctic Exploration.

The Toppan Boat Mfg. Company, Boston, Mass., recently completed a 25-foot motor boat for the American Museum of Natural History in New York, which ordered the boat for work in the far North in connection with the Crocker land expedition. This unknown land was sighted by Lieutenant Peary and his party while returning from the North Pole and Donald McMillan, who was with Lieutenant Peary on his North Pole trip, is in charge of the projected expedition of exploration. The Toppan boat is now doing preliminary work in Labrador and the North, to facilitate matters for the expedition next year and reports state that the McMillan party are well pleased with the work the boat has done up to date. She received a very thorough trying out on her maiden trip from Medford, Mass., to Labrador, which was made under her own power. The Toppan Mfg. Company have found business very brisk during the last few months and many sales have been made to people in the vicinity of Boston as well as in other parts of the country. In addition to their large line of power dories of all sizes and descriptions, the company has recently taken the eastern representation for the new Racine-Truscott-Shell Lake Boat Company and is now in a position to furnish any of the motor craft made by the latter concern from the 10-foot tender to the big 60-foot Racine cruiser.

An Interesting Cruiser.

On this page is shown the plan of an interesting cruiser of the whaleboat type, a duplicate of which was recently built by the New Bedford Whaleboat Launch Company (formerly M. J. Casey) of New Bedford, Mass., for T. K. Hastings, of New York City. The Cachalot is a large, roomy, seaguing boat 30 x 9 ft., powered with a 14 h.p. Stanley engine, which gives her a speed of about 9 knots. She is very substantially built, with frames of native oak, stringers of long leaf pine, white cedar planking and cabin sides and coamings of mahogany. All the engine controls are carried to the wheel, making it easy for one man to handle her. She has a self-bailing cockpit and the gasoline tanks have drip pans draining overboard, making it hard for fuel to get into the bilge. Her interior fittings include a toilet, lavatory, sink, alcohol stove, ice chest and plenty of locker room. She also has a substantial awning and a mast. The Cachalot has given such satisfactory service that her builders are using her as a stock model.

Imp—a Fast Bath Runabout.

Imp, pictured on page 68, is a remarkably fast little boat for the amount of power installed. She was built by the Bath Marine Construction Company, Bath, Me., and embodies their well known type of thwartship and longitudinal construction. Her framing is of white oak, into which are notched Oregon fir stringers. She is planked with ⅝ inch mahogany, copper riveted to the stringers. Her power plant is an 18-25 h.p. Sterling with an aluminum base and Bosch magneto. The engine is installed in a rather unusual manner, the flywheel being placed aft and the reverse gear forward. The gearing is arranged so that when the engine is turning at say 1,000 r.p.m., the propeller is revolving at a speed of 1,666 r.p.m. In actual service, the engine turned at 1,120 revolutions, giving the Hyde turbine wheel with which the boat is equipped a speed of 1,865 revolutions, which drove her at about 22½ miles per hour. The Imp is owned by P. K. Wrigley of Chicago.

A Remarkable Run.

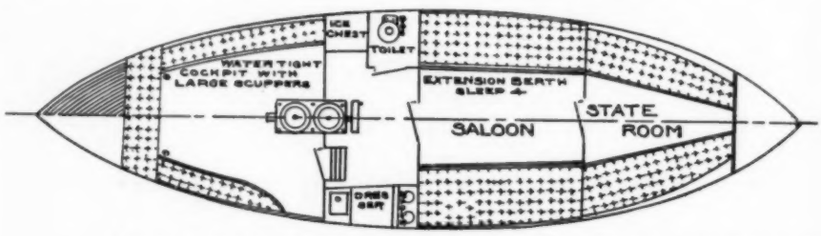
A remarkable endurance run was recently made by E. L. King of Winona, Minn., in his new 40-foot runabout Kingfisher. Mr. King left Savanna, Ill., on the morning of July 14th for a trip to his home in Winona, a distance of 225 miles up the Mississippi river against a current of from 3 to 4 miles an hour. The run was made in exactly 10 hours, with stops for only gasoline and lunch. Mr. King said that he was not out for a record, but simply desired to try out his new eight-cylinder 150 h.p. Sterling engine. The machine was only run at about 900 r.p.m. so that he had during the entire trip 300 or 400 revolutions to spare. This engine is a duplicate of the motor that drives J. J. Ryan's Reliance hydroplanes and shows what a speed engine can do when installed in other than a racing hull.

New York Agency Exhibits Working Engine.

The Gasoline Engine Equipment Co., of 133 Liberty Street, New York City, who are eastern distributors for Ferro, Van Blerck and Ideal marine motors, have a novel exhibit at their store in the shape of a working engine. The company, in addition to the motors, carries a full line of Columbia propellers, Joe's reverse gears, automobile steering wheels, magnetos, Cleveland auto boats, etc.

Steinmetz Forms Foreign Connection.

Joseph A. Steinmetz, of the well known steel tank manufacturing firm of Janney, Steinmetz & Co., has become associated with R. W. A. Brewer, of London, in a consulting capacity with a view to an exchange of opinions on American and European inventions and devices which may be used to advantage both in this country and abroad. Mr. Brewer transacts business under the title of Efficiency, Ltd., and is known as a consulting and designing engineer of wide experience. Mr. Steinmetz recently purchased the American rights under a series of United States patents for the manufacture of the Sharpe muffler which has enjoyed such a wide reputation abroad. He will re-design this device so that it can be manufactured of seamless steel rather than aluminum or cast iron. Mr. Brewer has ordered a complete line of J. S. & Co. seamless steel tanks for his laboratory and demonstration rooms and will recommend them to the European trade.



A 30 x 9 foot cruiser of the whaleboat type built by the New Bedford Whaleboat lines and an unus-

Caille Company Grows Fast.

The Caille Perfection Motor Company, Detroit, Mich., manufacturers of the well known Caille Perfection marine engines, have been compelled to increase the size of their plant from time to time, owing to the rapid growth of their business until they have to-day a two-cycle marine engine plant which stands well up among the largest in the country. The most modern machinery for turning out accurate work at the lowest possible cost is included in their equipment. Considering that the company started only a little over five years ago, their growth has been remarkable and from present indications this expansion will continue through the next few years.

The Kansas City Sportsmen's Show.

The second National Sportsmen's Show to be held during 1912, will be staged at Kansas City, Mo., from the 23rd to the 29th of this month. Preparations are being made to furnish special events and features that will attract sportsmen from all parts of the country and make the exhibition the equal if not the superior of any show of this kind ever held in the country. Special reservations have been made for motor boat displays and this branch of outdoor sport promises to be well represented. The management state that notwithstanding the late announcement of the exhibition, nearly 50 per cent. of the arena floor space allotted for exhibitors was sold within less than 30 days to leading manufacturing concerns.

"Disco" Makers Bring Out Electric Starter.

The Ignition Starter Co., of Detroit, Mich., best known as the manufacturers of the Disco engine starter, have announced that they will put a high grade electric starting, lighting and ignition system on the market about the first of the month. The company have been working over the device for some time and have at length perfected a system which they believe will meet the demand for a high powered and high-priced electric outfit of this nature. This does not mean, however, that the gas starters will be neglected. On the contrary, contracts have been closed for the Disco which mean an increase for 1913 of 130 per cent. over the 1912 business of the company.

A Correction.

Commodore Wilson, of the Ocean City Motor Boat Club, has brought to our attention the fact that the heading at the top of page 43, in August MoToR BoatinG, which showed the clubhouse of the Ocean City Motor Boat Club during the annual regatta, was wrongly credited to the Ocean City Yacht Club, as were also the pictures of Slick and Chelsea Special at the bottom of page 45, which were taken during the same regatta. We greatly regret that this error occured and wish to thank Commodore Wilson for calling it to our notice.

Grossman No Longer Vanguard Agent.

The selling arrangement between the Emil Grossman Company, of New York City, and the Vanguard Manufacturing Company, Joliet, Ill., for the sale of Vanguard shields, expired on August 1st and was not renewed. The Emil Grossman Company intends to devote its energies to the manufacture of Red Head plugs and its other well known specialties.

An Ideal Cruising Ground.

For the motor boatman of the Atlantic seaboard, Chesapeake Bay has ever proved to be the ideal cruising ground, for with its 200 miles of open water and thousands of miles of navigable rivers, the Chesapeake region appeals both to those who find their greatest pleasure in swinging over the long rollers from the ocean and to those who are fond of quieter waters. On every river emptying into the bay, may be found small towns where supplies of every description may be obtained from the storekeepers, who are usually agents for gasoline engines, while provisions may be purchased directly from the farmers whose places are on the water. In making a cruise on the Chesapeake, however, it is best to fit out at Baltimore, which is at the head of the bay and the first port of call from the Chesapeake and Delaware Canal. In that city, a good place to remember is the Mann Yacht Building Co., located at Ferry Bar just a couple of miles west of Fort McHenry. Not only is their yard and plant particularly adapted to the needs of the small cruiser, as well as more pretentious craft, but Mr. Mann has an intimate knowledge of the bay from his own experience and will willingly advise the motor boatman as to the best routes, etc. The Mann Company also has unusual facilities for caring for boats of all sizes during the winter months.

A good looking 30-foot runabout built for F. M. Laraway of Minneapolis by the Moore Boat Works, Wayzata, Minn. She can do 15 miles and will be used on Lake Minnetonka.

Hotel Man Enters Engine Company.

M. A. Shaw, a well known hotel man of Chicago, for many years and later manager of the Hotel Tuller and Griswold, Detroit, has purchased a half-interest in the Gilmore Mfg. Co., of that city, makers of Gilmore marine engines. Mr. Shaw will assume the duties of general manager, while Geo. Gilmore will continue to supervise the manufacturing. The Gilmore line comprises motors of from 1½ to 50 H. P.

Two New Vim Agents.

The Vim Motor Co., of Sandusky, Ohio, has completed arrangements with the Lunt-Moss Company, 43 South Market street, Boston, Mass., whereby the latter concern act as representatives for Vim motors and accessories in the New England states. A full line of motors and accessories will be carried. Geo. E. Parker is manager of the marine engine department. The Verrier-Eddy Co., of 17 East 21st street, New York City, will represent the Vim Motor Co. in southern New York, including Long Island, and northern New Jersey. The firm will take second-hand engines of other makes in part payment for new machines.

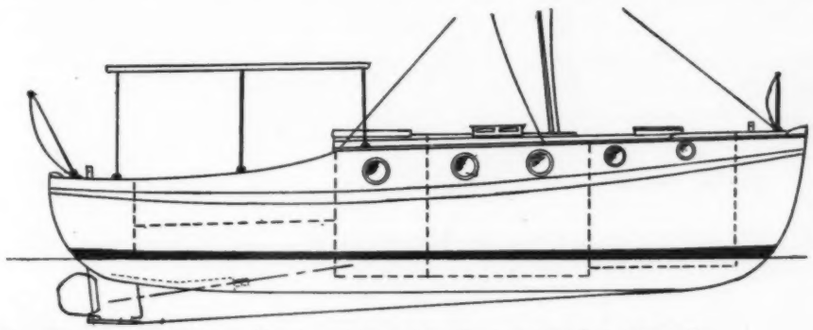
Atwater Kent in New Factory.

The Atwater Kent Mfg. Works, of Philadelphia, Pa., have taken possession of their new factory building, located at the corner of East Logan street and Stenton avenue, near Wayne Junction, on the Germantown & Chestnut Hill division of the Philadelphia & Reading Railroad. The new building is a one-story structure affording 21,000 square feet of floor space, and is especially designed for the manufacture of the ignition apparatus which forms the product of the company.

A Marine Unit Power Plant.

The Truscott Boat & Auto Supply Co., of St. Joseph, Mich., are offering a 15 h.p., four cylinder, four cycle marine unit power plant, comprising engine, reverse clutch, magneto, rear starter, automobile steering wheel, carburetor and muffler, for boats of the runabout type from 20 to 30 feet in length. The La Salle unit power plant is something new in marine work and the saving it effects in the cost of installation is worth considering. The single operation of bolting the motor down to the bed and lining it up with the propeller shaft completes the installation of the entire propelling machinery. The La Salle is not an automobile engine adapted for marine work, but is a strictly boat motor, designed and built by marine engine men in collaboration with a motor car engine designer and embodies the compactness, reliability, flexible control, and to a great extent, the light weight of the motor car power plant with the large bearing surfaces, substantial construction and long life of the marine motor. The La Salle is built in but one size and the price is based on manufacturing cost plus a small profit, with nothing added for expensive sales, literature and advertising. The cost of the plant complete, including Bosch magneto and Schebler carburetor, is $298. For those who do not desire the complete power plant, the bare engine is sold for $160.

Dark Island, a fast 60-footer built by the Gas Engine & Power Co., and Chas. L. Seabury & Co., for F. G. Bourne. Her 200 h.p. Speedway motor drives her 22½ miles per hour.



Launch Co., New Bedford, Mass. Her plan and profile show clearly her seaworthy and really roomy interior.

The Latest Anderson Engine.

On page 52 will be found an illustration of the latest product of the Anderson Engine Co., Chicago, Ill. The engine is a 50 h.p., four cylinder machine, with a bore of 7 inches and a stroke of 8 inches, complete with extended base and reverse gear. Anderson engines are built on the four cycle principle and the popularity the earlier models have enjoyed will, to judge from the orders that are now being received, be assured for the latest addition to the line.

A Simplified Starting, Lighting and Ignition System.

The Otho Motor Co., Boston, Mass., are putting out a simple and efficient starting, lighting, ignition and signalling system, a diagram of which will be found on page 52. The Otho system is built right into the flywheel, which is the only moving part of the device, and has no complicated or moving wiring, no gears, clutches, chains or other mechanisms to get out of order and cause trouble. The system generates its own power and then uses it in a mechanically and electrically perfect manner for starting, and has at the same time an ample reserve supply for lighting, ignition and signalling.

Making Broken Engine Parts New.

The Waterbury Welding Co., Waterbury, Conn., is making a specialty of welding broken and apparently useless motor parts so that they can go right on giving good service, when, to a casual observer, they were before the repair fit only for the scrap heap. Cylinders with broken jackets or inner walls or having corners broken off, broken crank cases and scored bores can be put in shape at a charge rarely exceeding one-half the cost of a new part and usually in a much shorter period of time than it would take to get a duplicate part from the factory. Scored cylinders are treated by welding metal of the same quality as the cylinder onto the scored surface and then grinding off the surplus in a special machine, leaving the cylinder walls as round and smooth as when new and with the same bore. This is more satisfactory than re-boring and does not necessitate the use of a special size piston and rings. The cost is moderate and a feature is made of prompt deliveries.

The Campbell Cotter Pin.

A. C. Campbell, of Waterbury, Conn., is marketing a cotter pin which has some points of superiority over the ordinary type. The Campbell pin is inserted in the hole as a straight, round wire, split lengthwise with the lower half a little longer than the upper half and curved upwards at the end. A few blows on the eye drives the upper half of the pin over the curved end of the lower half, automatically spreading the ends and locking the pin in place. By inserting the point of a screw-driver or similar tool in the eye and twisting, the upper half of the pin is drawn back and the two halves straighten out, enabling the pin to be removed with the fingers. Each pin can be used an indefinite number of times. Campbell pins are made in lengths of from ½ to 2 inches, and in a large number of diameters.

Fairbanks Engine Wins Puget Sound Championship.

In the Puget Sound Championship motor boat regatta, held July 23, 24 and 25, on Lake Whatcom, under the auspices of the Lake Whatcom Motor Boat Club, the 20-foot class race was won by High Ball, of Everett, owned by Bailey Hilton. She was designed by L. H. Coolide, of Seattle, and is powered with a 24 h.p. type G Fairbanks-Morse motor. High Ball is capable of a speed of 31.7 miles per hour on a straightaway. In the 20-mile race a speed of 27.58 miles per hour was maintained over a 2½-mile course, which necessitated eight complete turns. High Ball also took third place in the free-for-all in which there were six entries. High Ball was distinguished by being the smallest powered boat for her displacement entered in the regatta, and covered 160 miles at racing speed in the three days of the regatta without the slightest engine trouble.

New Departure Adding to Plant.

The New Departure Mfg. Co., Bristol, Conn., manufacturers of New Departure ball bearings, are making additions to their factory which will give a total floor space of nearly 75,000 square feet. A quantity of special mechanical equipment is now being made for the new buildings. The New Departure plant is working 127 hours per week in all departments and 152 hours per week in some, with day and night shifts of skilled mechanics and this condition is assured for several months to come by actual contracts for 1912 and 1913 delivery. DeWitt Page, secretary of the concern, reports that the fiscal year ended July 1st was the largest in the history of the company.

Kenyon Cushions Save Lives.

It is unfortunate, but true, that the pleasant sport of motor boating sometimes brings accidents of a more or less serious nature and when these occur, a reliable life saving appliance, like the Kenyon life preserver cushion, is a mighty good thing to have along. Two accidents in particular that occured during the summer help to confirm this statement. On July 18th, a motor boat belonging to Miles Miller, of Napanee, Ont., which had on board besides the owner, Mr. and Mrs. Kidd, of the same city, and their baby, caught fire from the engine backfiring and was burned to the water's edge. The occupants seized the Kenyon life preserver cushions with which the boat was equipped and jumped into the water where they remained until rescued. The second case in point occured on August 5th. Three men, two of whom were accompanied by their families, were running down the St. Louis River at good speed, when the propeller of their boat hit an obstruction which twisted off the wheel and drove part of it through the bottom of the boat and she soon began to fill. The boat was equipped with Kenyon cushions and it appears that after the passengers had taken all they wanted of them, the remainder floated up under the canopy and kept the boat from going down. After the people were rescued the cushions under the canopy kept the boat afloat while she was being towed in, a distance of about two miles. Kenyon cushions are made by the R. L. Kenyon Co., 100 Abbott Street, Waukesha, Wis.

Niagara Engine Shows Up Well at Hamilton Regatta.

The Niagara Gasoline Motor Co., of Buffalo, N. Y., are feeling proud of the record made by the 32-foot displacement boat Gadfly, owned by H. B. Greening, of Hamilton, Ont., at the Great Lakes Power Boat League regatta held at that city from August 8th to 10th. Gadfly had a 90 h.p. six-cylinder Niagara motor and carried off the first prize in the 40-foot displacement class; the first prize for the best time in the International handicap; the second prize in the International Championship of the G.L.P.B.L.; and the third prize in the free-for-all for 40-footers, in which hydroplanes could be entered.

Ferro Makes Close Race on the Delaware.

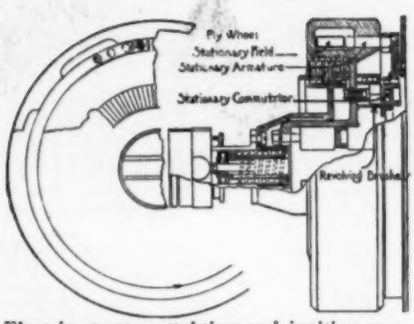
Although handicapped by having the heaviest hull and the smallest power plant of the three speed boats in the race on the Delaware June 29th, Bixly II, owned by Jas. Fryer and Son, of Chester, Pa., was second by only a small margin and pushed the winner closely for the entire distance. Bixly II is a 25-foot 9-inch runabout with a beam of approximately 5 feet and is powered with a 25 h.p. Ferro engine. The winning boat had a 30-40 h.p. motor and the craft taking third place was driven by 40 h.p. A fourth boat was entered in the race, but broke down shortly after the start.

Trade Literature.

Wonder Mfg. Co., Syracuse, N. Y. Leaflet of Wonder gasoline engines. These engines are made in a number of sizes, ranging all the way from 1¾ up to 10 and 12 h.p. One of the features of these machines is the ease with which they may be started. Another good point is the perfect control at both high and low speeds with either the spark or throttle.

Augusta, a handsome southern cruiser under construction at the yard of the Nelson Shipyard and Construction Co., Harrisburg, Texas.

CALENDAR.



Electric starting, lighting and ignition system made by the Otho Motor Co., Boston, Mass.

SEPTEMBER.

1st. Pistakee Yacht Club, Pistakee Bay, Ill. Handicap races.

2nd. British International Trophy, second race; Huntington Bay, Long Island.

2nd. Albany Yacht Club, Albany, N. Y. Grand opening regatta.

2nd. Holly Beach Yacht Club, Wildwood Crest, N. J. Moore cup speed boat race and club races.

2nd. Mahopac Boat Club, Lake Mahopac, N. Y. Relay race.

2nd. Pistakee Yacht Club, Pistakee Bay, Ill. Free-for-all handicap races.

2nd. Ocean City Yacht Club, Ocean City, N. J. Labor Day regatta.

2nd to 4th. Toronto Motor Boat Club, Toronto, Ont. International motor boat meet.

2nd to 4th. Atlantic Deeper Waterways Association and **Yachtsmen's Club of Philadelphia.** Cruiser race from Philadelphia, Pa., to New London, Conn., in connection with the convention of the Waterways Association.

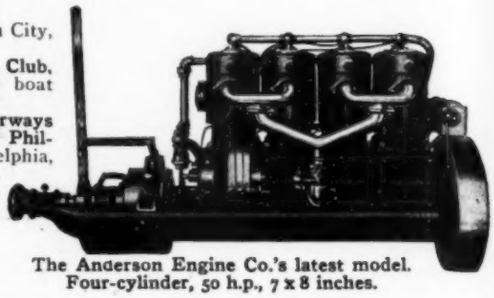
3rd. Maumee River Yacht Club, Toledo, Ohio. Motor boat race to Put-In-Bay and return.

4th to 6th. Atlantic Deeper Waterways Association. Fifth Annual Convention at New London, Conn.

7th. Mahopac Boat Club, Lake Mahopac, N. Y. Speed boat races.

7th. Motor Boat Club of Buffalo, N. Y. Races, 16-foot class.

7th. Trenton Yacht Club, Trenton, N. J. Class handicap races.



The Anderson Engine Co.'s latest model. Four-cylinder, 50 h.p., 7 x 8 inches.

7th. Detroit Motor Boat Club, Detroit, Mich. Inter-club regatta.

7th to 9th. South Bay Yacht Club, San Jose, Cal. Cruise to San Francisco.

8th. Hudson River Motor Boat Club, New York. Open race to Poughkeepsie and return.

8th. Cleveland Powerboat Club, Cleveland, Ohio. Ohio State Championship speed boat races.

8th and 9th. Sacramento Boat Club, Sacramento, Cal. Races.

8th and 9th. Los Angeles Motor Boat Club, Los Angeles, Cal. Cruise to the Isthmus.

12th. Columbia Yacht Club, Philadelphia, Pa. Class handicap races, D.R.Y.R.A.

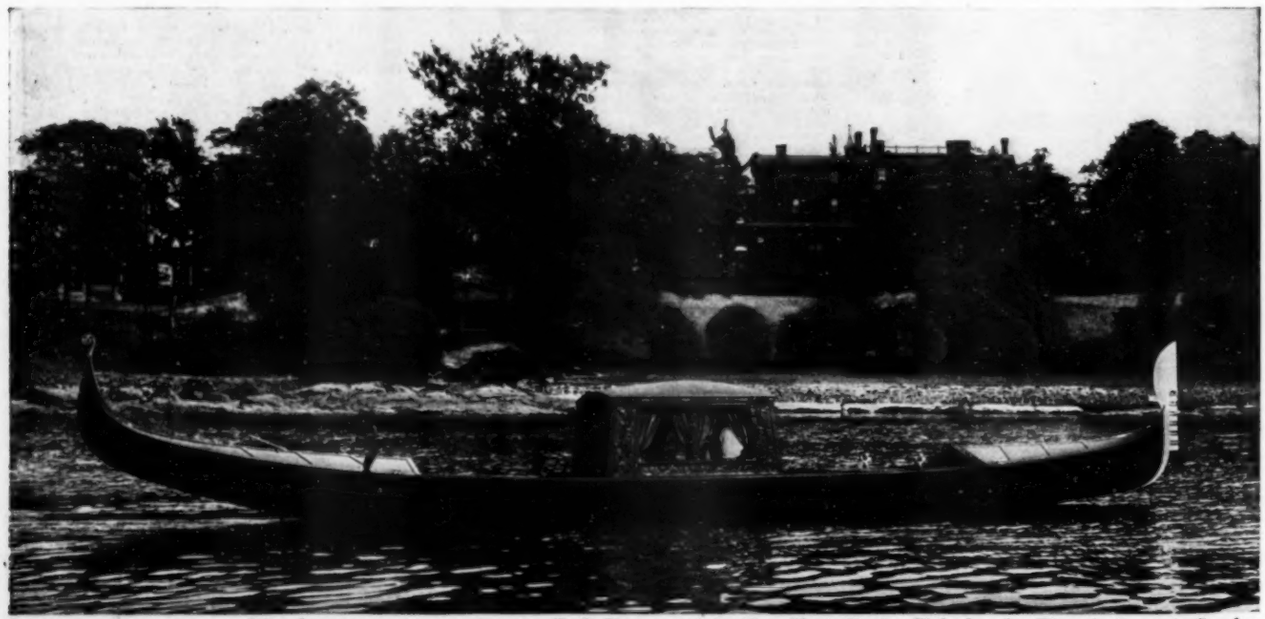
12th to 14th. Motor

(*Continued on page* 68.)

Mammoth plant of the Caille Perfection Motor Co. at Detroit, Mich.

A Gondolierless Gondola.

Commodore F. G. Bourne, of the New York Yacht Club, has just had delivered for his use at his home in the Thousand Islands, a boat which has occasioned much interest and admiration. This boat is a forty-foot Venetian gondola built by the Electric Launch Company of Bayonne, New Jersey. It is equipped with an electric motor and storage batteries, giving a normal speed of seven and one-half miles an hour with a maximum speed of nine miles an hour. In workmanship it is probably one of the handsomest boats ever turned out, and is constructed of Indian teak and African mahogany. The entire exterior of the *felsi*, or cabin, is all hand carved, as can be discerned in the photograph, and the interior is luxuriously upholstered, even the ceiling being panelled in leather. So that the gondola should be built in strict accordance with all the traditions which have been handed down from the early ages of the Doges, some dating back to the Eighth Century, the builders made exhaustive research of all that has been written pertaining to these craft. For instance the *ferri* or irons, which decorate the bow and stern, are exact reproductions of those on a boat built in the Eleventh Century. They are made of polished nickel steel. The highly ornamented rowlocks, or *forcoles*, represent sea horses and are bronze castings on carved teak bases. The anachronistic electric motor power has been skillfully concealed so that the boat silently glides along as though propelled by some ghostly gondolier.



A beautiful anachronism. This forty-foot gondola built for F. G. Bourne, of the New York Yacht Club, by the Electric Launch Co. for use in the Thousand Islands, is an exact copy of the graceful craft seen in Venice in the days of the Doges, except that she is driven by a skillfully-concealed electric motor instead of a gondolier.

MOTOR BOATING ADVERTISING INDEX

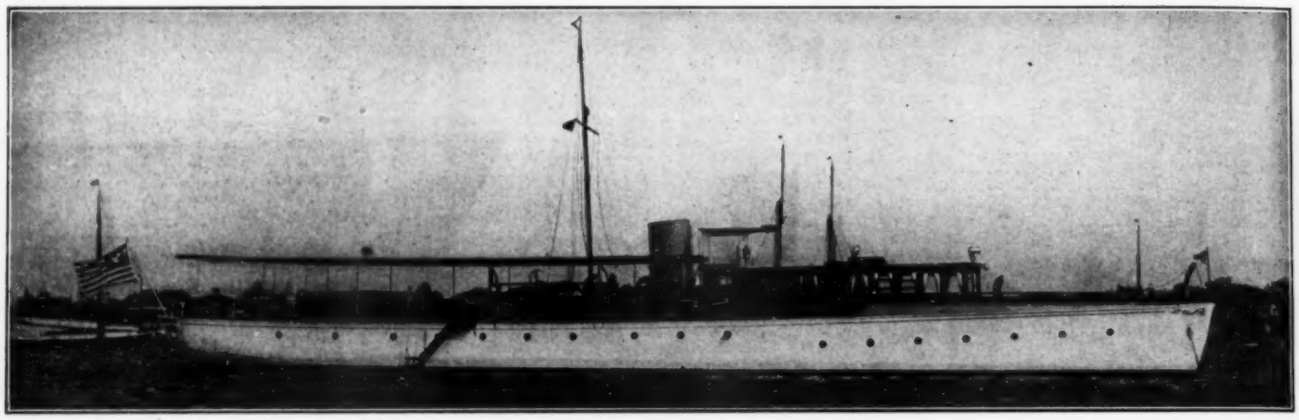
COX & STEVENS

NAVAL ARCHITECTS AND YACHT BROKERS

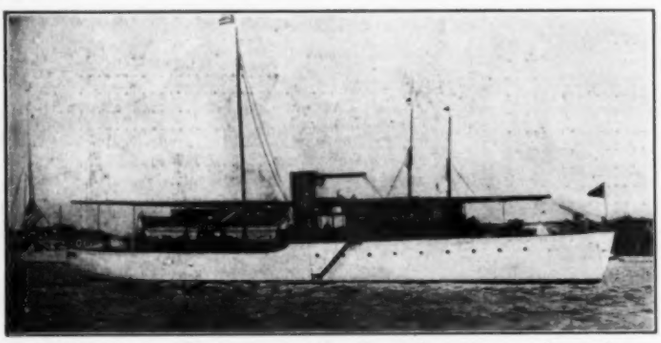
Telephone
1375 Broad

15 William Street
New York City

We have a complete list of all steam and power yachts, auxiliaries and houseboats available FOR SALE and CHARTER. A few are shown on this page. Plans, photographs and full particulars mailed on request.

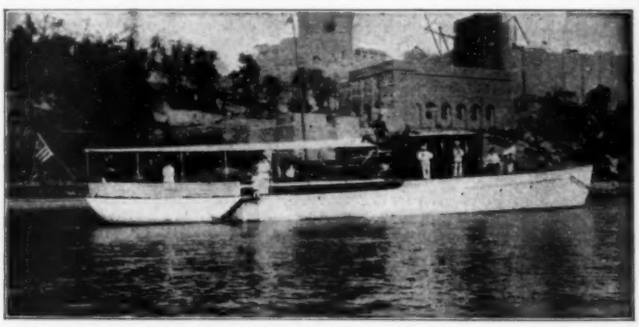


No. 885.—For Sale or Charter.—Exceptionally handsome, fast, steel, twin screw cruising power yacht; 118 x 16.6 x 5 ft. Built 1910, from our design. Speed up to 18 miles; two 300 H. P. Craig motors, three double staterooms, main and dining saloons, two bathrooms, electric lights, etc.; handsomely finished and furnished. Probably the most desirable proposition ever offered in a large gasoline yacht. Apply to Cox & Stevens, 15 William St., New York.



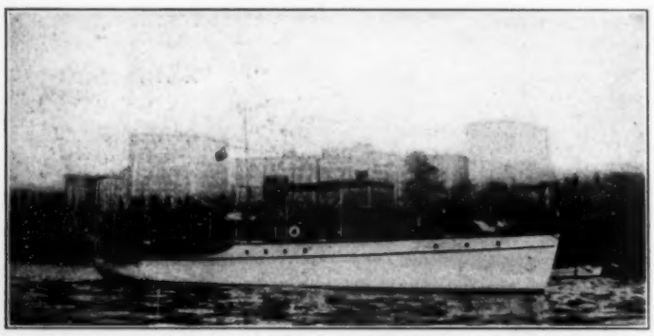
No. 961.—For Sale.—Twin screw cruising power yacht; 90 x 17 x 4 ft.; speed 12-14 miles, built by Lawley from our designs; four staterooms, bath, etc.; all conveniences. Cox & Stevens, 15 William Street, New York.

Please mention MOTOR BOATING.



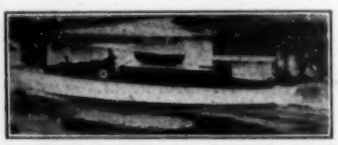
No. 464.—Excellent Bargain.—81 x 13 ft. power yacht; Lawley build; speed 13-15 miles; 100 H. P. Standard; two double staterooms, dining and main saloons, etc. Cox & Stevens, 15 William St., New York.

Please mention MOTOR BOATING.



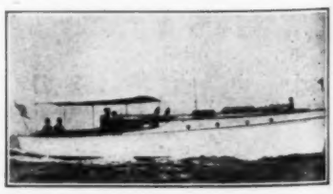
No. 1532.—For Sale or Charter.—Best 75 ft. cruising power yacht available. Speed 12-14 miles; twin screw. Three staterooms, bath, independent lighting plant, etc. Cox & Stevens, 15 William Street, New York.

No. 521.—For Sale.—Raised deck cruiser; 57 x 13 x 3.6 ft. Exceptionally roomy; one double and two single staterooms, saloon, bath, electric lights, etc. In commission. Apply to Cox & Stevens, 15 William Street, New York.



No. 444.—For Sale or Charter.—61 ft. gasoline cruiser. Speed 11 miles; 25/32 h. p. Standard. Double stateroom, saloon, etc. Cox & Stevens, 15 William Street, New York.

No. 982.—For Sale.—Bridge deck cruiser, 50 x 10.6 ft.; launched August, 1910; speed 12 miles; double stateroom, saloon, etc. Cox & Stevens, 15 William St., New York.



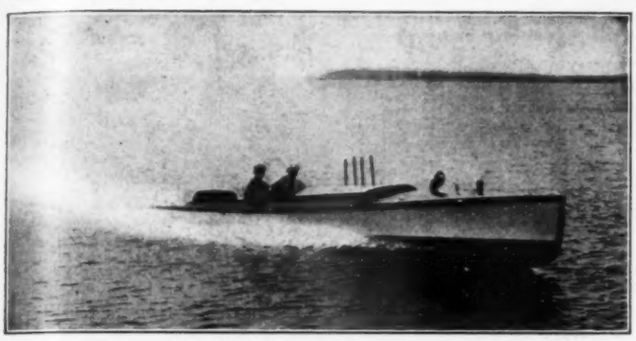
No. 1075.—For Sale.—40 x 9.8 ft. raised deck cruiser; built 1910. Speed 10 miles; 16-20 h.p. 4 cyl. Standard. Double stateroom, saloon, etc. Bargain. Cox & Stevens, 15 William Street, New York.

THE MOTOR BOATING MARKET PLACE

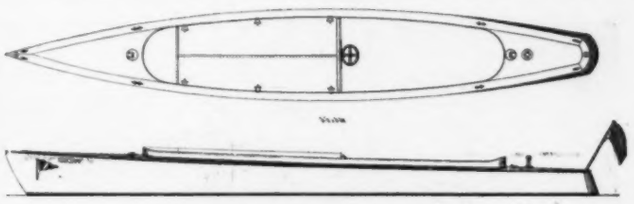
Opportunities for the Motor Boatman

The rate for "For Sale" and "Want" advertisements is 3 cents per word. If an illustration is used the charge is as follows, which includes the making of the cut:
Cut one inch deep, one column wide..... $2
Cut 1½ ins. deep, 1⅝ columns wide..... $3
Cut three inches deep, three columns wide.....$10

Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offers of the month. Please mention MoToR BoatinG.



26 ft. Elco runabout. Good cockpit. Inspectable at Greenport or Shelter Island, N. Y. Apply for particulars to Wm. Becker, 31 Belvidere Street, Brooklyn, N. Y.

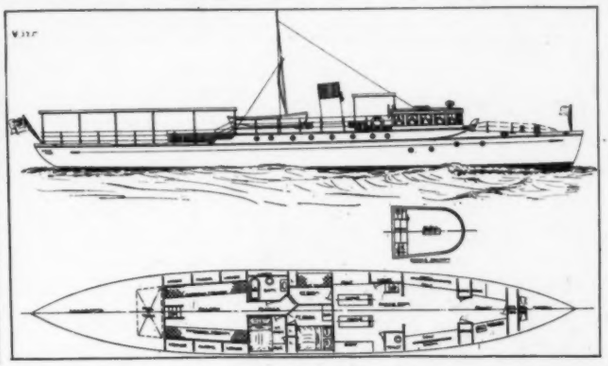


BOAT FOR SALE.

Fast runabout, 32 x 5 feet, beautiful model, cedar hull, copper fastened, mahogany trimmed. Six (6) cylinder 4⅛ x 5½ engine with Stromberg double jet carbureter, Bosch magneto, reverse clutch, copper exhaust piping to stern; seamless steel gasoline tank. High class outfit without any tricks or faults. Starts every time without difficulty. Shows 23 miles without preparation and 25 miles under favorable conditions. Very cheap to operate. First offer for $1,200 takes it. Have bought larger boat which is the only reason for selling.

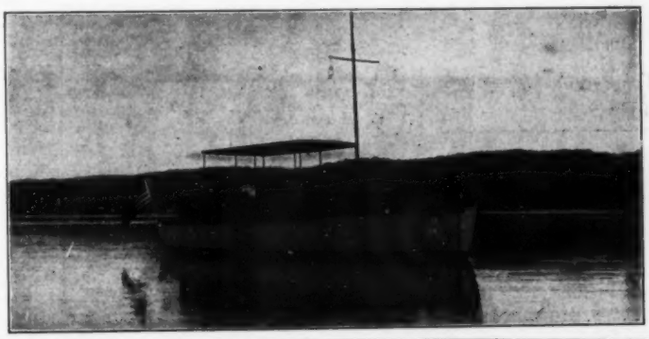
W. E. S. DYER, Land Title Building, Philadelphia, Pa.

Built 1911. 40 x 10. Speed 10½ miles sure all day. 24 h.p. Loew Victor Engine, which has never failed a minute since installed. Consumes two gallons per hour. One man control. Sleeps six in best beds. 25 for day trips. Complete cruising and day equipment. Alcohol stove. 10 electric lights. 135 gallons gasoline. 60 gallons water. Everything in perfect condition. In private use daily. Fastest, safest and best cruiser of size in South. Building larger boat same model and engine. Price, $2,500. Porcher L'Engle, Jacksonville, Fla.



2813.—Handsome 92 ft. cruising motor yacht; twin screw; Sterlins motors; in commission and fully equipped for extensive cruising; well adaptable for coast and Florida waters; very roomy accommodations, consisting of dining saloon on deck, engine room and crews' quarters forward; 2 double, 1 single stateroom and cabin aft. Price very reasonable. Full particulars and plans from Whittelsey & Whittelsey, 11 Broadway, N. Y., telephone 4718 Rector.

We offer for sale, to quick buyers, the following exceptional bargains in rebuilt Standard motors:
300 H. P. Standard, single acting, air starting and reversing, six cylinder, 12 x 14, good as new.....$2,250.00
300 H. P. Standard, single acting, air starting and reversing, six cylinder, 12 x 14, 1907 model, good as new..... 2,500.00
25-35 H. P. Standard, brand new, with equipment, 1911 model, never out of crate 1,300.00
25-35 H. P. Standard, 1910 model, with shaft, equipment, magneto attached, perfect condition 875.00
18-25 H. P. Standard, 1909 model, thoroughly rebuilt, shaft, propeller, stern bearing, stuffing box, coil, magneto..... 600.00
Two 12-16 H. P. Standards, twin screw outfit, rebuilt, magneto attached.....$425.00 each
BRUNS, KIMBALL & COMPANY, INC.,
132 Liberty Street,
New York City.



SEA HORSE—40 x 8.6 x 3.6, Lozier 25 H. P. motor, just overhauled. Has Bosch magneto, electric lights and complete equipment. Will sleep five. An ideal boat for Florida waters. Price reasonable. G. V. Lyons, 628 West 139th Street, New York City.

GASOLINE ENGINES: Four cylinder 45 H. P., four cylinder 35 H. P., four cylinder 22 H. P.; cheap; new and guaranteed; marine or auto; will ship on approval. Bill Ferguson, 422 Commercial St., Waterloo, Iowa.

BROKEN PARTS WELDED EXPERTLY AND GUARANTEED.
Why risk sending your broken cylinders and crank-cases to inexperienced and irresponsible welders when you can get expert workmanship, prompt service, and fair prices from an old and responsible firm? Write us for estimates and look up our references. What good is a guarantee unless the firm behind it is reputable and responsible? We refer to Dun, Bradstreet, or any Waterbury bank.
WATERBURY WELDING COMPANY, WATERBURY. CONN.

FOR SALE—Cigars direct from the manufacturer. Our Factory-to-Smoker System can not be equaled in our prices. Just consider a Havana Filler Cigar. We will send you 100 at $3.50 or 50 at $1.75, express prepaid. This quality of cigars retails the world over at 10 cents. Send in your order or write for particulars today. Address Roland Alexandria Cigar Co., Tampa, Fla.

SECOND HAND GASOLENE MOTOR WANTED—Thirty or forty H. P., medium or slow speed; must be in good condition; write, giving full description and price. George E. Hardy, care The Hardy Paint & Varnish Co., Toledo, O.

CABIN CRUISER, 27 x 8 ft., new, strong, powerful boat, 25 H. P. motor; batten seam; ⅞ planking, screw fastened; bargain for quick sale. Box 103, Little Ferry, N. J.

BEST BOAT FOR FLORIDA BUSINESS—Sell or charter double decker gasoline passenger boat; will carry 125 people; one man can run her; 50 x 13 x 3; 40 H. P. 20th Century engine; speed 12 miles; new 1912. Price $3,200; send for photo. Box 229 Port Washington, L. I.

A SPLENDID opportunity for a mechanic with a small shop or any handy man with tools. We will sell for seven hundred and fifty dollars, the following new, nearly completed 4 cycle "Terry Engines." One 5 H. P., 1 cylinder; five 10 H. P., 2 cylinder; four 15 H. P., 3 cylinder; five 20 H. P., 4 cylinder; two 30 H. P., heavy duty; one 20 H. P., heavy duty. These engines when assembled should be worth from five to six thousand dollars. This is a rare chance and if you are interested better communicate immediately with Bruns-Kimball, 132 Liberty Street, New York City.

FOR SALE.—Cruising yacht "Swastika," length 50 ft., beam 8 ft., draws 34 inches. 50 H. P. six cylinder gasoline engine, speed 14 miles. Wicker deck chairs, cabins mahogany, velour upholstery, fully equipped sleeping accommodations for six. Dinghy on deck. Ice box. Galley with four hole range. Lockers, buffet, two lavatories, large storage batteries with separate engine for charging, 1500 C. P. searchlight. Comfortable, safe and speedy for the ideal 1100 miles cruise St. Paul to St. Louis on the Mississippi, up the Illinois River and canals to Chicago. Inquire R. L. Kinsey, Sailing Master, Foot of Chestnut St., St. Paul, Minnesota.

FOR CHARTER—By day or week, cruiser "LILY," completely equipped, electric lights, lavatory, galley, icebox, etc. Otto Thomas, 324 E. 89th St., N. Y. 'Phone Lenox 5123.

WANTED—Fast day express cruiser, length between 50 and 60 feet, for delivery in September. Must be one-man control, with all power forward, and be able to make easily 20 miles per hour. Send photos and blue prints. James Sprunt, Narragansett Pier, Rhode Island.

CYLINDERS REBORED—Pistons and rings fitted, new cranks, connecting rods, cases, transmissions, any part for automobile or motor boat motor reproduced like original. Gear cutting of all kinds and materials. Send old part. The shop of quality. McCadden Machine Works, St. Cloud, Minn.

BEARINGS
Ball and Roller—All Types
For American and Foreign Cars
and Motor Boats
Distributor of
"F. & S." "B. A. F." New Departure
Standard (S.R.B.)
Other Makes in Stock
Vixen Files
THE GWILLIAM COMPANY
Broadway and 58th St.
New York.

SPECIAL BARGAINS.
We have a number of brand new fully guaranteed 1912 models over and above our manufacturing schedule for this season. These will be disposed of at unusually attractive prices. Write at once for particulars as the supply is limited. We also have a few foreign makes accepted in trades. These motors have been carefully overhauled and are in first class running order.
1 cylinder, 4 x 4¼, 12-15 H. P. Barber.....$150.00
4 cylinder, 3½ x 5, 12-15 H. P. Sterling..... 198.00
THE ROBERTS MOTOR CO.
1501 Columbus Ave., Sandusky, Ohio.

NEW 54 H. P., six-cylinder Elbridge engine, just from factory. Aluminum manifolds, base and cylinder heads, extra finish throughout. Built for Mr. Coleman du Pont of Wilmington, Del.; exchanged for a larger power. Price $700. Emerson Engine Co., Alexandria, Va.

WELDING.
Cracked Cylinders and all Broken Castings in any Metal SECURELY Welded and GUARANTEED at about one-half the cost of a new part. NATIONAL Welding & Mfg. Co., Incorporated, 527 Jackson Boulvd, Chicago, Ill.

CANADIANS, Second-hand engine bargains. Send for list. Guarantee Motor Company,
73 Bay Street, North, Hamilton, Ont., Canada.

USE "SNAPPER" ENGINES for your small boats. They are a big little engine built by The Automatic Machine Co., Bridgeport, Conn.

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Cut three inches deep, three columns wide.....$10

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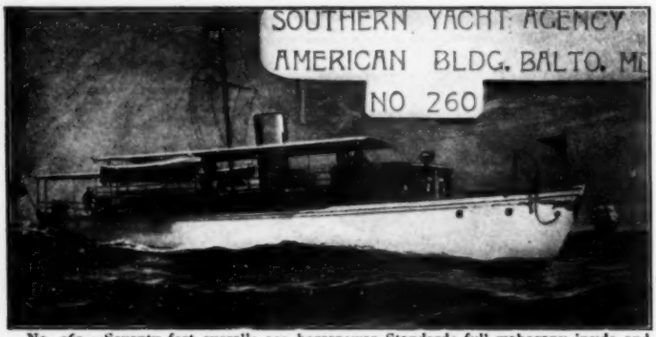
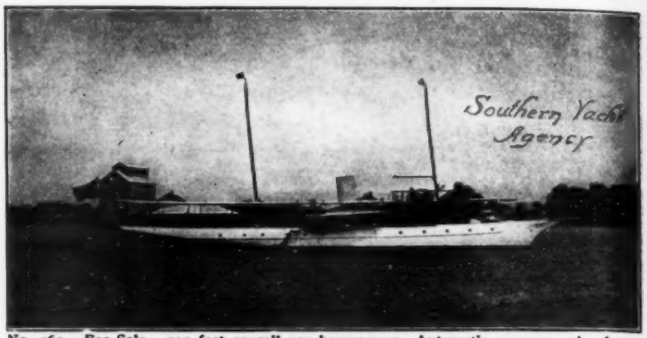
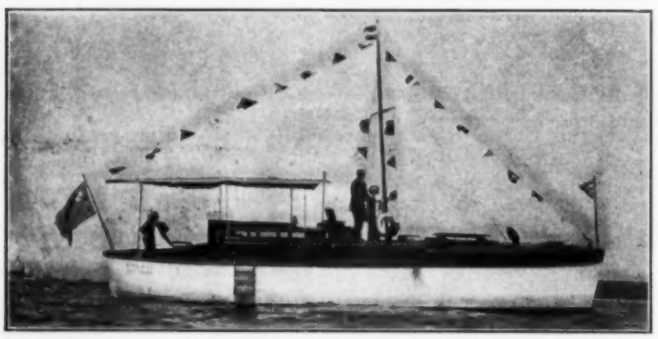


No. 260.—Seventy feet overall; 100 horsepower Standard; full mahogany inside and outside; very handsome; built 1910; perfect condition; speed fifteen miles. Sell less than half cost.



No. 262.—For Sale.—112 feet overall 150 horsepower Automatic new 1912; handsome and able. Other high class boats, large and small, for sale at attractive prices

Southern Yacht Agency, 1108A American Building, Baltimore.



Sacrifice for one-third of value; 38½ foot cruiser; four cylinder Craig engine; two separated staterooms, engine room, toilet, mahogany woodwork, electric lighting; steers from deck and cockpit; one man control; complete equipment; excellent condition; must sell; is at Ruddock Yacht Works, 214th St. and Harlem River, or write to Anna III, care Motor Boating.

For Sale.—Ideal craft for Florida cruising; mahogany hunting cabin cruiser, "Gallivant" V-32 ft. o. a.; 9 ft. beam, 2 ft. 6 in. shoal draught; six months in Florida waters proved 3 ft. draught the limit; "Gallivant" strongly designed by Schock; built by Newey, Bellport, L. I., by day's work; mahogany and cypress finished bright; 6 ft. headroom; ventilated perfectly; 18 H. P. "Standard" engine, clutch, dynamo and equipment; good for 10,000 miles and no trouble; large toilet room; best W. C., stateroom; 2 berths; engine room has wide berth, green leather cushions; refrigerator, pump-sink, stove-stand, buffet, large closets, water, gasoline and whistle tanks; brass government equipment; inventory new, complete. Inspection by appointment near New York. Have plans drawn for "house-boat;" offer this fast, seagoing craft at sacrifice, $2,000. Owner, E. V. Rosemond, 600 West 115th St., New York.

WANTED—Second Hand Boat Engine. Must be of good make and in thorough repair. Four Cycle, Magneto Ignition. Four Cylinder preferred, 5¾ in. to 7 in. bore, by 6½ in. to 8½ in. stroke. Heavy duty type. To drive propeller not over 28 in. or 30 in. diameter. Complete and detailed price and history required. W. J. A. Bolles, 242 Water St., New York.

FOR SALE—Motor Boat, 23 feet long, 6½ foot beam, 2-cylinder 6-horsepower Palmer Engine; seagoing; seating capacity 15; full equipment. Abe Kridel, 26 Broad St., Red Bank, N. J.

"PATENT ATTORNEYS"—$10.00 each for the names and addresses of persons interested in patents. For particulars address Post Office Box 2343, Washington, D. C.

ENGINEER—CAPTAIN—Young man (American) is open to engagement. Familiar with N. J., N. Y. and L. I. Sound waters; 20th Century, Standard and Hall motors, General Electric Generators. Phila. and N. Y. references. Cassaday, 1915 N. 13th St., Philadelphia, Pa.

FOR SALE—18 ft. by 4 ft. 2 in. launch with 4 H. P. motor complete; one 6 H. P. single cylinder, 4 cycle motor at bargain if sold at once. F. B. Swenson, 48 East Second Street, Covington, Ky.

AUTOMOBILES.

AUTOMOBILE, Marine, Motorcycle Cylinders reground, new pistons and rings fitted. Makes engine equal to new. Write for particulars. Cast Iron Brazing Co., Manchester, N. H.

CARBURETORS, REVERSE GEARS, MAGNETOS, rear starters, universal joints, spark coils, force feed oilers; cheap; new and guaranteed; will ship on approval. Bill Ferguson, 422 Commercial St., Waterloo, Iowa.

BEST STEEL HULL LAUNCHES.

We build the best zig-zag double riveted steel hulls on the river. Our own original model 30 ft. 16 gauge steel hull pleasure launch is simply a beauty. Finished in hard oiled oak with four cylinder 35 H. P. Northway engine with latest Remy magneto, easily makes 12 miles against and 20 miles with current per hour on Mississippi River. Price complete, without top, $500.00. Other sizes, too.
ROSEDALE MACHINE & SUPPLY CO.,
Rosedale, Miss.

TANKS—Five new copper ones, each about 24 x 17 x 48 inches. Price $50. P. O. Box 154, New Rochelle, N. Y.

WANTED—A cabin cruiser, 25 to 45 ft. long, 8 to 10 beam; must go 12 miles or over. J. Louis Smith, Covington, La.

Sell Your Motor Boat or Motor in This Market Place

When a man is looking for a certain article he naturally refers to the place where he will be most likely to find what he wants. Thousands of readers know of the bargains that are always listed in the Motor Boating Market Place, so they look here first.

Successful advertisers follow the same course as those who are looking for something—they place their advertisements where they are most likely to be seen by prospective buyers.

Motor Boating has a guaranteed circulation in excess of 25,000 copies per issue, and every copy is seen by several persons. In this way practically every motor boat enthusiast in the country is reached, as well as the principal foreign markets. In this great audience there are sure to be several prospective customers for every article you want to sell.

We will write your advertisement if you will send full information and tell the amount of space you wish used. Enclose remittance to cover size of advertisement you want, figuring at rate of 3 cents per word, each insertion.

MAIL YOUR ADVERTISEMENT TODAY

MoToR Boating

J. S. HILDRETH, Adv. Mgr., 381 Fourth Ave., New York

The Race to Bermuda.

(*Continued from page* 11.)

and we noted a change in the sea. The clouds began dancing about and at dawn we renewed our hopes, for the glass indicated a change. At 5:30 a.m. we saw the sun and we certainly welcomed old Sol. Young and Roland decided we had run too far eastward so we came about and headed due west. They calculated that we were 80 miles to the east of Bermuda but were not sure until they could get the latitude at noon, so we ran half speed and they took sights every hour.

The sun came out and warmed us up and we all took on life anew. The sea calmed down and we knew that we surely must pick up the island before night. Birds were sighted at 10 a.m. Thursday noon we got our latitude, but were uncertain of longitude owing to drift of previous two days, so decided to run down latitude and then put her east and run down longitude. We put her south and ran to 32° 20′ by dead reckoning at 4 p.m. (lat. of Bermuda) Got longitude sight at 4:15 p.m., giving 66° 23′ west, which concluded our calculations that we were 80 miles west. Put her on east (true heading) and made our landfall on west of island.

I was first to sight land and yelled at the top of my voice, "Land ahoy," but everyone said it was only a cloud, another storm coming out of the tropics to meet us. I was dead sure it was land and kept my eyes on it, finally climbing the mast, and at 3 p.m. informed them that I was right. By the glasses I could now make out hills and white spots.

At 5:20 p.m. (75th meridian time) we finished off St. David's Head and the pilot boat came alongside. Before Mr. Griffith came aboard we all asked in one breath, "Are the Dream crew safe?" and a shout of joy went up when we heard that they had finished. What cared we for the race—everybody was safe.

After passing quarantine, the pilot took us in. The mayor of St. Georges came aboard with Dr. Higgenbottom and welcomed us. The shore was lined with people to see us come in, for the mayor said everyone had given us up and the New York *Herald* had cabled Mr. Sheppard to send out a tug. Steam was up and they were all ready when the lookout on St. Georges signaled that we had been sighted.

The members of St. Georges Yacht Club would not let us clean up but bodily took us ashore to their club and gave us one of the *best meals that I ever had.* They could not do enough for us; refused to let us return to the boat, but put a man aboard to watch her and supplied us with dry clothes, and after that most delightful *hot* meal with *real coffee* and *steak* we soon felt like turning in. The club entertained the entire crew at their clubhouse, which, by the way, is 120 years old and is built of Bermuda rock with hand-hewn lumber.

The following morning after breakfast, Commodore Meyer and Commodore Higgenbottom, Mr. Otesbudger and the secretary, Mr. Darnell, escorted us in their boats to the Royal Bermuda Y. C., at Hamilton, where we arrived at noon and received another royal welcome. Dinner was ready and the crew of the Dream sat down opposite us with the cup in the center of the table.

Detroit Reaches Queenstown.

THE 35-foot motor boat Detroit, under the command of Thos. Flemming Day, arrived at Queenstown at 8:30 o'clock, on August 7th, after a stormy voyage across the Atlantic. The time from New Rochelle, N. Y., was about twenty-four and one-half days. The crew of the Detroit were welcomed by crowds of people, and the chairman of the city council of Queenstown, together with other city officials, met the party and extended congratulations. The Detroit met heavy weather and high seas and was obliged to heave-to several times during her long voyage. On one occasion the gasoline in the engine room took fire, but the blaze was extinguished before any serious damage was done.

The Great Lakes Meet.

(*Continued from page 21.*)

each class and were without exception the best collection of trophies for a meet of this kind that have ever been offered. They were presented on the last day of the race by Commodor Pook, in the presence of several thousand people at the clubhouse.

The officers of the Great Lakes Power Boat League are: C. H. O. Pook, Commodore, Hamilton; P. C. Jones, Vice-Commodore, Toledo; A. Y. Gowan, Rear-Commodore, Cleveland; J. G. Murphy, Fleet Captain, Hamilton; T. B F. Benson, Measurer, Toronto; W. F. McGiverin, Secretary-Treasurer, Hamilton.

The Results:

Five-mile handicap for boats with two cylinders or less. Handicaps based on actual trial performances and starts made in order of handicaps. First, Generva; second, Vesta V; third, Ethel K.

Three-mile free-for-all. First, Heloise; second, UU IV.

Ten-mile handicap for all boats, handicaps based on performance, starts in order of handicaps. First, Generva; second, Daisy; third, Wanetta.

Forty-foot class, 20 statute miles. First, Heloise; second, Loew Victor II; third, Alice Mary.

Twenty-six foot class, 20 statute miles. First, Heloise; second, Loew Victor II; third, Philomel.

Forty-foot displacement class, 20 statute miles. First, Gadfly III; second, Elanor; third, Alice Mary.

Thirty-two foot class, 20 statute miles. First, Heloise; second, Loew Victor II; third, Gadfly III.

Great Lakes Power Boat League Championship for Gold Trophy. Free-for-all, 25 statute miles. First, Heloise; second, Gadfly III; third, Elanor.

International Handicap for boats over 15 miles per hour. Handicaps based on performance. First, Nulli II; second, Gadfly III; third, Alice Mary II. Time prize won by Gadfly III.

Consolation Race for non-winners, 5 miles. Won by Marjorie.

Chicago's Carnival.

(*Continued from page 8.*)

pass her crew a line buoyed with a barrel, which was made fast to the speed boat and down she went. The water had pushed under the forward end of the metal strip put on the day before, curling it back like so much tissue paper besides breaking in several more planks and frames. Divers and a derrick were put at work at once and some time during the night she was raised, but in the process the sling slipped letting her down and doing further damage.

Wednesday the weather was the best of the week so far, clear, cool and the water perfectly smooth. The entire course was plainly visible from the grandstand all the way around and, best of all, two new boats had arrived. Baby Reliance II, the pride of the east, owned by Commodore Blackton, and Eph, belonging to Carl Fisher of Indianapolis. Crusader III had been patched up and was running around the harbor, but Kitty Hawk was still in the hospital.

Baby Reliance II is a 20-footer with an 8-cylinder Sterling engine taking up the most of the boat, which was built by the Smith-Ryan Boat Co. She is the same hull that had the 12-cylinder Van Blerck engine in at Davenport on July 4-6th, when she made the world's record of a mile in 1.08. She was then known as Baby Reliance III and has since raced elsewhere under another name. Her low hull is painted grey and the engines stand well out of the cockpit; two cylindrical gasoline tanks are placed on the starboard side and the clutch and gear are at the forward end. The propeller shaft extends nearly to the bow and there are two tubes for forcing air down beneath the hull when she is planing. The steering is done from the starboard side aft and two outboard rudders are fitted with tillers projecting through the stern, fastened together beneath the deck. One magneto bolted to the 3rd and 4th cylinders is used for ignition and the cranking is done from the after end of the engine.

Calendar.

(*Continued from page 52.*)

Boat Club of Buffalo, N. Y. Speed boat regatta and race for the Thomas Trophy, on the Niagara River.

14th. Delaware River Yacht Racing Association. Record Trophy races at Camden, N. J. Speed boat class.

14th. Crescent Athletic Club, Yachting Dept., Brooklyn, N. Y. Motor boat races.

15th. Lakewood Yacht Club, Rocky River, Ohio. Races for all classes.

15th. South Coast Yacht Club, Los Angeles, Cal. Motor boat races.

15th. Excelsior Yacht Club, Brooklyn, N. Y. Club race for open boats.

15th. Corinthian Yacht Club, San Francisco, Cal. Motor boat races.

16th to 21st. National Motor Boat Carnival. Races on the Hudson River near Yonkers, N. Y. Auspices, Motor Boat Club of America.

21st. Delaware River Yacht Racing Association. Record Trophy races at Wilmington, Del. Cruiser class.

21st. Taunton Yacht Club, Taunton, Mass. All classes.

21st. Wilmington Yacht Club, Wilmington, Del. Speed boat handicap races.

25th. Cleveland Powerboat Club, Cleveland, Ohio. Races for all classes.

Imp, a 25½-mile Bath runabout with an 18-25 h.p. Sterling engine. She is described on page 50.

International Meet at Toronto.

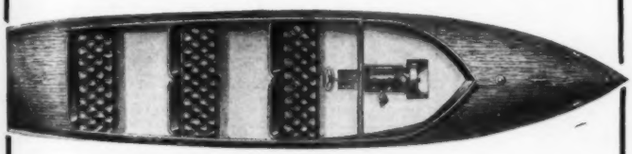
An International motor boat meet will be held at Toronto, Canada, in connection with the Canadian National Exhibition from August 31st to September 4th, under the auspices of the Toronto Motor Boat Club. On Saturday, August 31st, the contestants will be given time trials and their time allowances will be based on their performances during the time trials, less an allowance of 3 per cent. Any boat which in an actual race cuts her trial time more than 3 per cent. will be disqualified for that race and her new time recorded. The boats will be classified as follows: A, boats of over 18 miles per hour; B, boats of over 12 miles and up to and including 18 miles; C, boats of 12 miles and under. The racing will start at 2:00 o'clock each day of the regatta. On Monday, September 2nd, will come the first heat of the mile races for class A; 10-mile handicap races for classes A and B, and a 5-mile handicap for class C. On Tuesday the second heat of the mile races for class A will be run off and 10-mile handicaps for classes A and B. Wednesday will witness the final heats of the class A mile sprints; the 15-mile International handicap race for class A; a 5-mile handicap for class C, and the Canadian National Exhibition Championship open race for class A over a 20-mile course. The course for the races will be laid out on Lake Ontario in front of the parks of the Canadian National Exhibition and will be five miles in length, with three legs one mile each and one leg two miles.

One of the youngest motor boatmen. The five-year-old son of J. Ferguson, of Balboa Beach, Cal. He handles his Evinrude-powered boat without assistance.

"SUMMER GIRL"

$267.00
BOATING SENSATION

Length 20 feet, width 4 feet 6 inches, depth at mid-section 25 inches.—Mahogany trim, copper fastened throughout, copper fuel tank—right in every particular. Equipped with single cylinder, 2 cycle, 4 H. P. motor.



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Equipped with 2 cylinder, 2 cycle, 6-8 H. P. motor, reverse gear and auto steerer. Speed 12 miles per hour.

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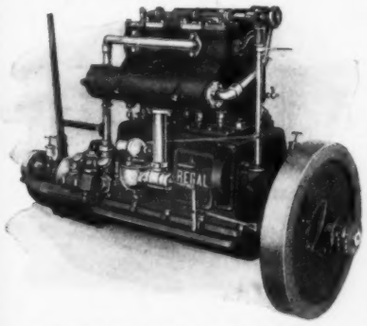

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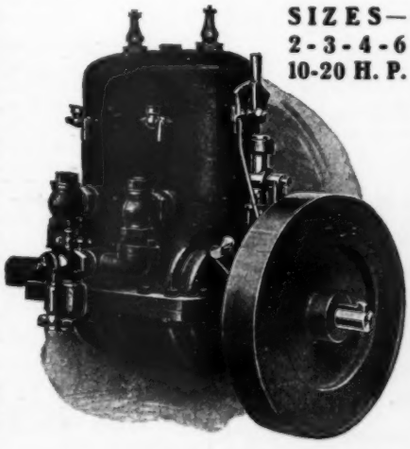

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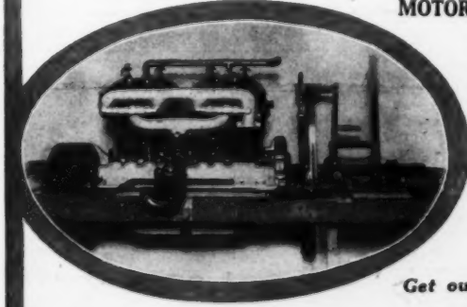

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Gentlemen:-

Wish to advise that the 30-45 H.P. Sterling installed in my 40 ft. cruiser "Thistle" has given every satisfaction as the following list of events to date will show:

June 15.--- Spring Regatta, New Rochelle Yacht Club. Open cruiser race for all sizes. "Thistle" won first.

June 22.--- Fifth Annual Power Boat Race, New York to Block Island, 100 nautical miles. "Thistle" finished 3 hours, 15 minutes ahead of second boat. Also broke record for the course in 10 hours 45 minutes and won Thomas Fleming Day Cup for corrected time.

June 29-30- New York Motor Boat Club's annual New York to Albany and return race for cruisers. "Thistle" finished 3 hours, 30 minutes ahead of second boat. Also broke record for the course, running 27 hours, 25 minutes at top speed without missing a spark and with no attention whatever except refilling oiler.

July 6.---- New Rochelle to Stratford Shoal Light and Return, 65 nautical miles. "Thistle" finished first, breaking record for the course with similar performance of the engine as in the Albany race.

This engine has given the same service in every race and cruise since its installation. We were greatly aided in equipping the boat by the actual tests you gave us, of the power developed at different speeds. The revolutions increased as the engine limbered up but the variation was slight.

Yours very truly,

J. H. Wallace

Rear Commodore, N.Y.A.C.
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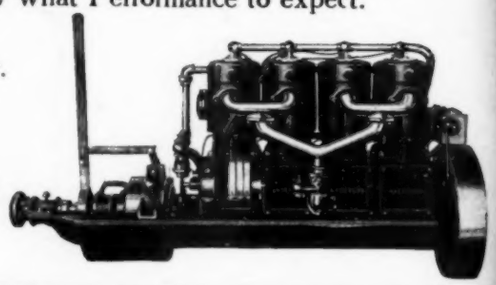

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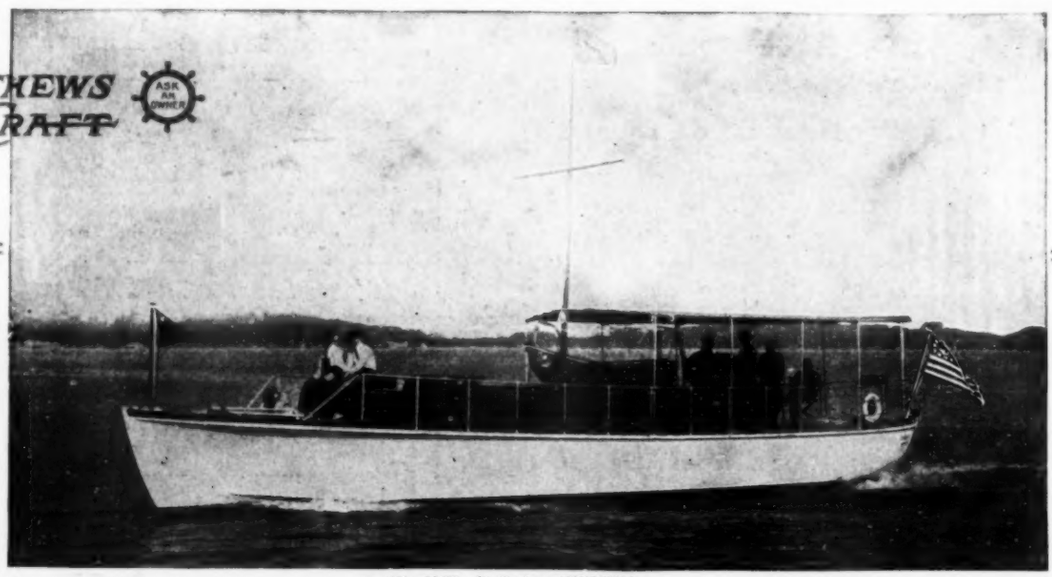

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